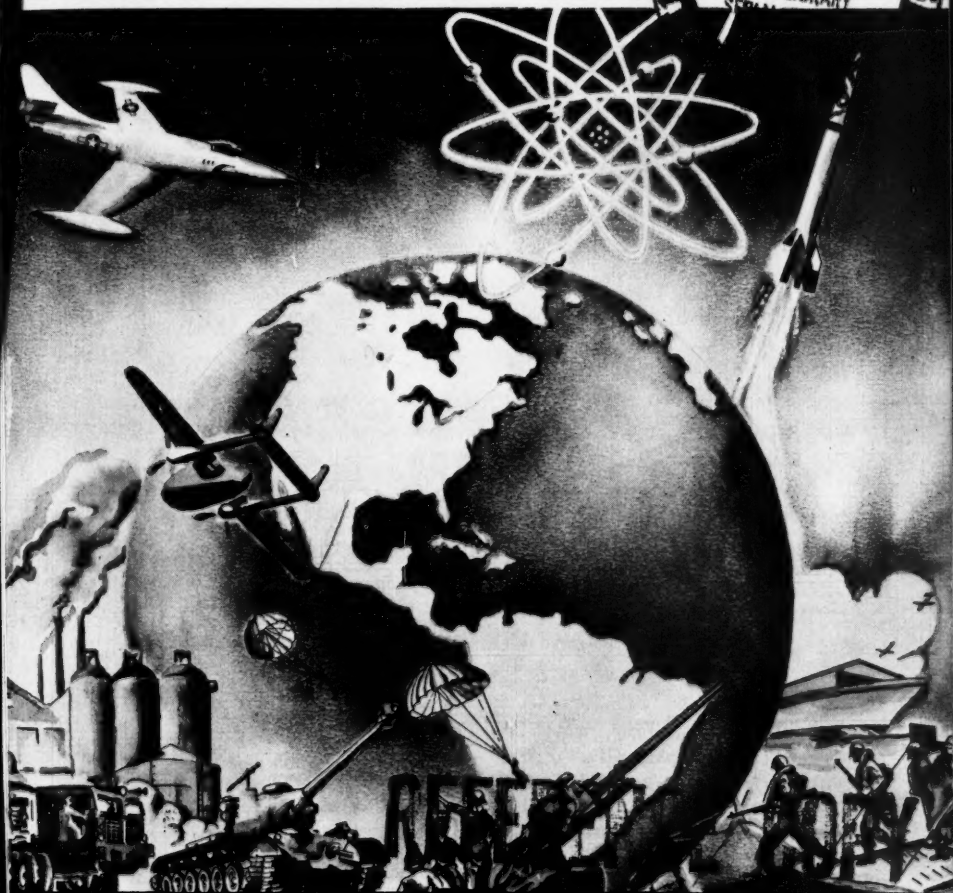


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FORT LEAVENWORTH, KANSAS

MARCH 1952 VOLUME XXXI NUMBER 12



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Sea Power: Abstraction or Asset?

Walter Millis

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The views expressed in this article are the author's and are not necessarily those of the Department of the Army or the Command and General Staff College.—The Editor.

THE Korean war, the intensified effort of rearmament to which it has led, and the attendant "great debate" over policy and strategy have alike compelled a reappraisal of the significance of "sea power" in American defense planning. Mr. Hoover's proposal that the United States should retire behind its oceans and Senator Taft's more moderate variant—suggesting that the United States should confine its contribution for the common defense mainly to its "sea power" and "air power," leaving the "land power" to the Europeans or the Chinese Nationalists—both reveal a new awareness of sea power in the total political-military equation. And both seem to suffer from the many misconceptions which have grown up in the course of years around the whole "sea power" concept.

The Mahan Thesis

It is at least a question whether the celebrated thesis of Alfred Thayer Mahan, however stimulating in its day, has not

outlived its usefulness. According to a witticism of Philip Guedalla's, if Mahan "discovered nothing in particular he discovered it very well." Modern sailors might be tempted to think that he discovered it, if anything, rather too well. In calling attention to the fact that the operations of war vessels, unseen in their desolate element, had often had an influence on war and history quite disproportionate to that usually accorded them, he was introducing a valuable corrective. It was true and important to remember that "power" could be exercised by armed ships—through commerce destruction, blockade, the denial of water routes of attack to an enemy, and the opening of such routes to one's own forces—quite as well as by land armies utilizing their normal methods of invasion, physical conquest, and occupation. In emphasizing this, however, the Mahan doctrine tended to give to "sea power" an appearance of *independent* reality and influence which it could, in fact, claim only rarely. The phrase "sea power," if not quite a misnomer, was, at best, misleading.

It clouded what should be obvious: that the ocean wastes were significant only in relation to land; that the only real prizes of war were land and its resources, and the control it gives over human beings (who could permanently maintain themselves nowhere else); and that all wars

Since political decisions, which are the ultimate objectives of all military action, are attainable only upon land, all power is really 'land power' and should be so conceived. In short, military power must be unitary

were finally decided on land—even those in which the closing ceremonies might, as in the Pacific, take place on board a battleship. Even sea power's own unique weapon—blockade—was ordinarily of little military value in itself; its strangling effect derived largely from the excessive exertions imposed upon the enemy by simultaneous land attack. Mahan's correction tended to become an overcorrection in the hands of his own followers. And at this point a curious fate overtook it with the appearance of the aviators.

Air Force Concept

The airmen seized enthusiastically upon the "sea power" doctrine, applied it by analogy to the new element of which they were the masters, and with the resultant concept of "air power" advanced to rule the world—over the obsolete bodies, incidentally, of seamen and soldier alike. The air, it was reasoned, is a separate element, like the sea; itself uninhabitable, it is also unbounded and gives direct access, not simply to coastal frontiers, as does the sea, but to every land frontier and to the heart of every inhabited community. With sufficient numbers of armed aircraft one might establish a "command of the air" on the pattern of Mahan's "command of the sea"; once that had been achieved, one could then attack not simply an enemy's commerce, not simply his armed forces, but the heart and center of his national resistance—his industrial complex, his civil population, his governmental structure—with directly delivered high explosive. Just as soldiers had, in the past, failed to grasp the strategic significance and tactical uses of men-of-war, so neither soldiers nor sailors could be trusted to employ wisely a new weapon of such remarkable potentialities. The only answer, the aviators argued, was the recognition of "air power" as a third, independent element in warfare.

Unfortunately, the analogy, while close, was inexact, and the extension tended to

exaggerate all the flaws or weaknesses of the original model. It was inexact, to begin with, in one very important respect. At the very core of the Mahan concept there lay the physical fact that war vessels could not (beyond the very limited range of bombardment artillery) participate in land warfare nor armies fight at sea. Without this physical separation, there could have been no "sea power" theory. The military airplane, on the other hand, is of course indissolubly linked with every form of military action. Not only is it indispensable in all kinds of surface operations; World War II repeatedly demonstrated that surface operations were indispensable to the advance and success of "independent" air power. The sailors could, with reason, claim complete and independent control over the operations of armed ships. The aviators have been constantly bewildered by the fact that they could not establish a similar claim over the military airplane without reducing surface armies and navies to impotence, or, at most, to the status of mere auxiliaries for completing and securing the victories of "air power."

What militated against the latter course was the uncomfortable yet undeniable fact that in the actual experience of World War II "air power" had largely failed to produce such victories. The "sea power" theory had its weaknesses. "Command of the sea," exercised through a predominant battle fleet, could never be as complete or as easy of even partial attainment as the Mahan concept suggested; while new tactics or inventions—such as the submarine in World War I—might qualify it in unexpected ways. "Command of the air" was to prove even more elusive, and even more subject to dispute by new methods and weapons. And, even after the establishment of a reasonable degree of "command," the air weapon lacked the decisive effects which had been expected of it. Just as sea blockades took longer than theory always recognized, and were more de-

pendent on the simultaneous application of other forces, so there were definite limits upon what could be done by the air delivery of high explosive. Accurate delivery proved to be very difficult. Enemy military and naval forces rapidly developed effective protective measures; while both civilian morale and the industrial complex proved capable of withstanding an unbelievable amount of punishment. In the end, those real successes which independent or "strategic" air power could claim turned out (as in the case of sea blockades) to be largely a function of the terrific pressures simultaneously applied by surface forces.

Military Power Is Unitary

Yet "air power" theory, superposed on "sea power" theory, had, in the meanwhile, embedded the concept of three separate "powers"—diverse in method, but roughly equivalent in utility and effect in governing the relations of states—in the popular mind. Curiously enough, this concept was finally written into the organizational structure of the American military system at the close of a war which would seem to have demonstrated above all that military power is unitary; that aircraft, ships, and ground troops are alike ineffective except when utilized in closest mutual support, and that, since the political decisions, which are the ultimate objectives of all military action, are attainable only upon land, all power is really "land power" and should be so conceived.

All this was, or should have been, plain enough by the end of 1945; and after some years in which American military policy wandered weirdly in the jungles of inter-service rivalry and amid illusory hopes of "push-button" or gadget warfare, it was suddenly and vividly demonstrated anew with the outbreak of the Korean war in 1950. The first confident notion that "air power" would meet the crisis was shattered by a stubborn peasant in-

fantry which had never read the works of "Billy" Mitchell and was peculiarly well adapted, by its primitive training and supply system, to defy the costliest weapons of air war. "Sea power" saved the day by its command of ocean routes for prompt reinforcement; but it would obviously have been helpless if the United States, with aid from other members of the United Nations, had not been able to scrape together in time enough ground troops with which the reinforcement could be effected. Once some real "land power" was available, moreover, "air power" acquired a renewed value; for there is no doubt that the United Nations' command of the air, and the very powerful air weapons it was able to deploy, made it possible to retrieve both the first and the later Korean debacle with many fewer ground troops than would otherwise have been required. The dominant factor in every subsequent stage of the conflict has been the closest possible teaming of all arms and services—the use of amphibious Marines at the Inchon landing, of carrier-borne naval air as tactical support in ground operations far from the coast, of "sea power" to evacuate the X Corps from the north and regroup it with the Eighth Army, of all forms of air weapons to slow the Chinese advance and open the way for a "limited offensive" which, at this writing, has shattered another heavy Communist attack and worked its way back nearly to Seoul. Korea is one long lesson in the double fact that all military power is "land power"; and that it can be effectively exercised, under the conditions created by modern technology, only by the most skillful combination and concentration of all available weapons, whether airborne, sea-borne, or earth-borne, to achieve the desired political ends under the particular circumstances which may arise.

What has been redemonstrated in Korea must surely hold true upon the greater stage of world strategy as a whole. It is idle to think of the United States supply-

ing the "sea" and "air" power while the Europeans and the Chinese provide the "land" component. What is necessary is to look at the total problem, to consider all the various means available for meeting it, to reassess both the military assets and the military liabilities involved, and try to make the best possible use of the former while guarding so far as may be against the latter. From such a point of view, the ability of the United States and of the Western nations in general to command and use the sea routes will at once appear as a great asset, but, like most assets, of value only as it can be soundly invested, in conjunction with all other assets and in accordance with some clearly conceived purpose. In themselves, both "sea power" and "air power" are nothing; all that counts is power—no matter what its shape or in what element it operates—to accomplish some definite political end.

Containment

The end, in the present world context, may be simply stated. It is the "containment" of Soviet-controlled Communist dictatorship, while at the same time providing, so far as possible, for the protection of our people and territories against whatever attacks or reprisals this policy may invite. It is true that the policy of containment has been subject, since it was first clearly defined in an article attributed to Mr. George Kennan in the pages of *Foreign Affairs*, to severe criticism; but its severest critics have failed to supply any very practical or acceptable alternative. Despite all arguments over tactics, timing, or methods, it is the policy which has actually governed American foreign relations since the announcement of the Truman Doctrine in March 1947; and it seems likely to continue to govern in the future.

To succeed, "containment" clearly calls for many other instruments besides those of military power, such as economic and technical aid to threatened societies, polit-

ical leadership, and psychological and propagandist efforts; but events have proved that these, however necessary, are not enough. In face of the large Soviet and satellite armies, military strength is also indispensable; and it is the deployment and application of this military factor which is here alone under consideration. In general, it would seem that military means, as such, can operate toward containment in but two ways. One is by interposing direct physical obstacles—men and fire power—to the advance of Communist conspiracy, Communist armies, and the whole "apparatus" of the Communist minority police state. The other is by influencing, through threats of one kind or another, the decisions of those few powerful individuals who control the "apparatus."*

United States Military Policy To June 1950

Down until June 1950, the United States, so far as its military policy was concerned, put virtually its whole confidence in the second method. The threat of strategic air war was about its only military instrument through which to control events; and, at least since the end of 1947, "strategic air war" has meant, in fact, the delivery of the atom bomb on Soviet industrial and population centers. One of the many things we still do not know about war—curiously enough, considering our 6,000 years or so of experience with the subject—is the true efficacy of mass demolition, whether by fire and sword or by atomic energy, in producing the kind of political decision here desired. The lessons of 1939-45 were not, it would seem, particularly encouraging; but they were hardly final, and few Americans would willingly resign the threat value, whatever it may be, of the atom bomb and its carriers. As a threat, the bomb probably

* Influence may be exerted by bribe as well as by threat; by the "carrot" as well as by the "stick." But the carrot does not lie within the competence of the military arm.

has had a real value in containing the Soviet ground armies; not because it would necessarily bring the armies themselves to a halt with any promptness, but because it holds Soviet cities and industrial complexes in hostage, so to speak, for the ground army's actions.

The bomb is still, presumably, a potent political instrument. But its value is depreciating. Its effectiveness, as a threat, has been severely limited in two ways; one, of course, being the Soviet's development of a bomb of their own, which, by introducing a counterthreat of reprisals, puts a rather drastic restraint upon our own resort to the weapon. The other is the skill with which the Soviets have worked out techniques of aggression and expansion against which the threat is more or less inoperative. When it came down to cases in Korea, the atom bomb was not used, primarily because there was nothing we could have done with it which gave any promise of altering the specific situation with which we were trying to deal. The bomb could not blow the Communist infantry out of Korea; even vast devastations of Chinese and Siberian cities would not, for a long time, paralyze their primitive supply system, while such attacks were scarcely likely to produce in the minds of the Chinese or the Soviet leaders the kind of decisions which we desired. The bomb has afforded us no means of taking the pressure off Indochina or Tibet. If, as seems not impossible, Moscow is organizing a military attack on Yugoslavia to be delivered by the satellite armies surrounding that country, the bomb will afford only a very dangerous and unhandy answer, if it affords an answer at all. As long as Soviet Communist aggression follows the methods of piecemeal advance, it will be almost immune to an atomic strategy.

But if threats fail or are inapplicable, the military arm has only one other way in which to effect containment—by putting men and fire power on the ground to

interpose a physical obstacle to the Communist advance. Where the advance has already reached a sea barrier, as at the Formosa Straits, commanding naval forces are the necessary instrument, and should be sufficient; elsewhere, the one indispensable requisite is still ground troops, available where they can stop the physical progress of the aggressor army and its supporting police, where they can arrest infiltrators, hold the communications and propaganda and press networks against seizure, and, in general, maintain the citadels and levers of "power" against that form of sudden capture by an organized minority which represents the basic strategy of Communist aggression.

Military Policy Changed

This was the simple and somewhat brutal fact which Korea suddenly drove home—suddenly, but with such instant, unanswerable conviction that the United States acted upon it in the space of 2 or 3 days (when American ground troops were ordered into action) and then, in the space of a few weeks, rebuilt from the ground up (the phrase may be taken literally) a military policy with which we had been dallying and tinkering since 1945. The wave of armed and organized force which washed down over the 38th Parallel swept away tons of theorizing—military theorizing about "air power" and "sea power" and "land power"; diplomatic theorizing about the susceptibilities of the Soviet Empire; and political theorizing about the attitudes and aspirations of the Asian peoples. Abruptly, all this made no difference. It certainly made no difference what the Korean people thought about it; in a matter of days they would either be swallowed by a dictatorship which would give them no further opportunity to think, or force would have to be found to prevent it. It equally made no difference what the jealously guarded "missions" of the three services might prescribe. It was a case of get out at

once—leaving another disastrous breach in the policy of containment and another springboard for further Communist advance—or else of putting men and fire power on the ground to retain physical control of the situation. The decision was almost automatic. It was a decision to stay; and the rest has followed.

It was immaterial whether the men were from the Army or the Marines, except that each had special skills which it was important to fit into a pattern of maximum utilization. It was immaterial, except again in the same sense, whether their air support was provided by the Air Force or the Navy carrier planes. Sea control was vital in bringing the men to Korea and maintaining them there; it was, subsequently, most useful in maneuvering them about the peninsula; and it was able to lend powerful support even to battles far inland—not only by air but also by long-range battleship bombardment—which neither the Air Force nor the Army could have provided. But sea control was validated only by the men on the ground, without whom the carrier planes would have been even more helpless than were the Air Force's Japan-based planes in the first days of the war.

The Lesson Learned

Korea wrote the lesson plain. The policy of containment requires, for success, a military arm; that arm must be based on ground troops, available to control the actual (rather than the future hypothetical) situations which Communist expansion is constantly creating. In a context which is global, these ground troops must have the mobility which can be conferred only by control of the sea routes; they must also have the fullest possible support of tactical aviation, as well as whatever assistance may be lent, under the specific conditions, by longer-range "strategic" air war. The whole must be operated as a team, making optimum use of each available element in accordance

with the circumstances presented. The concept of cut-and-dried "missions," which was written into American military policy by the Joint Chiefs of Staff conferences at Key West and Newport in 1948, seems somewhat questionable. There will be conditions under which tactical air support can best be provided by the land based planes of the Air Force; but equally there will be conditions, and Korea has afforded examples, under which the Navy's carriers will provide a more prompt and efficient means to the end. The Navy has, on occasion, performed inland "strategic" missions as effectively as the Air Force; while even in the case of the atom bomb, which the Air Force has claimed as peculiarly its own, it is not difficult to imagine situations in which it would be desirable to be able to launch the weapon from one of the Navy's highly mobile floating "airfields" rather than from the fixed bases of the Air Force. In actual warfare, missions are dictated, not by service politics but by combat conditions.

Korea, at all events, has torn up the military policy which ruled in this country from 1945 to 1950. It is not only that the Nation has, at last, accepted a drastic expansion in the total scale of the military effort—to a point where, for the first time since the end of the war, it is absorbing a really punishing proportion of the national production—but that the emphasis has been abruptly changed. The new policy is no longer formed around the atom bomb; it is formed around ground troops. We are trying to get them everywhere, from Western Europe, from Greece, and from Turkey. We are taking a new interest in Chiang's Nationalists on Formosa and in Tito's ground army. But in trying to get them from others we are also (and it is, as Mr. Hoover apparently fails to realize, an indispensable condition to the success of such efforts) raising them from our own manpower. One of the first responses to Korea was not to order more air groups but

to draft four National Guard divisions into Federal service; and we are now trying rapidly to double our total manpower under arms. From relying on machines to serve as substitutes for men, we turned almost instinctively to obtain the men, for whom there is no substitute, leaving it to the machines to support and protect the men and enhance their effectiveness.

This puts the "machine," which includes everything from a *B-36* to a bulldozer, from a jet fighter to a cargo ship, in sounder perspective. The West as a whole cannot quickly match the Soviet and the satellite battalions. But, given a reasonably firm core of manpower on the ground, it can use its machines to expand greatly the power of the men it does have—provided always that the machines are used with skill, with a firm strategic purpose in mind, and with complete and flexible co-ordination of the capabilities of the machines. "Air power" is one such machine which would be far more effective in the actual contexts of today if its exponents had given more thought to them. An organization which could quickly make available anywhere in the world the combined tactical resources of the Royal Air Force, the United States Air Force, and the United States Navy and Marine aviation, drawing on each component for the particular types of aircraft or training best suited to the particular conditions, would be a powerful organization indeed. No such organization now exists. "Sea power" is another machine of the same kind. An organization which could similarly use the combined power of the United States and Royal Navies and their respective merchant fleets to put troops ashore at any desired spot, to supply them, and to support them to the full capabilities of modern naval artillery and aviation—or for that matter to supply and support troops already on the ground, as they are in Formosa, in Greece, in Turkey and in Yugoslavia—could again be a very powerful instrument of policy.

Our Present Advantages

Admittedly, it will be some years before the structure of Western defense can be rebuilt to a point at which it will be capable of containing an all-out assault upon Western Europe by the Red Army in full strength. Until that time, the atomic threat, for whatever it is worth, must continue to be the main reliance against such an eventuality. But it does not follow that the West, in the meanwhile, must remain militarily impotent. The West is seriously deficient in ground troops. If, however, it is fallacious to imagine that "air power" or "sea power" can be substitutes or alternates for "land power," there is no fallacy in observing that the West's dominance at sea and its relative strength in military aircraft (of all types and services) can immensely increase the effectiveness of the ground troops it does have. Command of the sea confers upon them the priceless advantage of mobility, and strength in the air gives them a tremendous additional fire power wherever they may be deployed. Properly combined and used, these advantages already confer upon the West very considerable powers for military containment.

We do not yet know the outcome in Korea. As this is written, however, there seems much reason for hope that, in the end, it will stand as a successful case of military containment—at a point where success was absolutely vital to the entire containment policy—achieved at a cost which, heavy and tragic as it now is, will still be negligible in comparison with the total resources of the Western world. And even this cost would obviously have been far less had the situation been foreseen, had policy been firmly determined in advance, and had the then available Western resources been marshalled to meet the crisis.

It is possible, of course, that the hope will be defeated, that the Soviets and Chinese will mass another and still greater

effort, that the commitment will become too great for the possible gains, and that evacuation will have to be accepted. Even so, the sea will make evacuation possible at a time which the West can choose; it will be a battle lost, rather than a war, and lost under circumstances which will make containment along the new line much easier than it would have been had Korea simply been surrendered to the first push of Communist armed force. This is the worst possibility. So far, all one can say is that the original line has substantially been held; and while the holding consumed almost all the military strength which was formed and available in the United States and elsewhere in June 1950, it has put only a minor drain upon our total mobilizable power. Of all our tremendous rearmament effort, very little as yet is actually earmarked for Korea.

Other Areas of Containment

One hopes that our enforced resort to military containment in Korea will prove as successful an investment in the end as was our resort to political-economic containment in Greece and Turkey in 1947. Meanwhile, there are other areas where military containment may have to be envisaged, along with political and economic counter force. There is Formosa; there is Indochina, gateway to Burma, Malaya, and Indonesia; and there is Yugoslavia, gateway to Greece, Turkey, and Italy. There is, though less immediately under pressure, the Scandinavian Peninsula. In respect to all of these, a definite plan of action, utilizing all available services and resources, based on the mobility conferred by the sea, the immediate air support which carrier-borne aviation can bring to each of these areas, the possibility of committing land based air and ground troops without forfeiting the ability to take them off again if need be, would probably have powerful political effect.

Such reasoning obviously lays one open

to the charge of advocating a series of small, indecisive peripheral wars, which would "suck in" and waste our whole military strength, leaving us helpless against the hypothetical big encounter, or would alternatively bring on a huge continental conflict before the combined strength of the West was equal to sustaining it. On such grounds the Korean war has already been bitterly criticized. One may perhaps venture certain answering observations. In Korea, it is not only Western strength which has been expended; the Soviet imperial system, as a whole, has certainly felt the strain, and may have felt it even more acutely than the West. It has seen one of its satellite armies—the original North Korean Army, formed, equipped, and trained for this particular job of expansion—destroyed as a military force. It has seen the Chinese Fourth Army, which is not only the best-trained and best-equipped, but also the most pro-Russian command in Red China, heavily mauled. Some observers believe that the Fourth Army has, in effect, been withdrawn from the campaign, not because it was defeated but because it was too valuable a political-military instrument to be further risked. If so, this would in itself represent a considerable victory for Western arms. There have, at the same time, been heavy losses in tanks, artillery, and similar matériel; no doubt a small matter for the Red Army itself, but making it so much the harder to supply other satellite forces for other adventures. The situation is obscure. But what appears to be current United Nations strategy, summed up in the remark recently attributed to a British officer in Korea to the effect that "Ridgway's interests are homicidal, not geographical," reflects a belief that in Korea the West can do more damage to the basic military potential of the Communist empire than the Communists can do to that of the West.

Other Strategic Considerations

As for the continental war in Asia, the sea leaves the West with the choice. It has always been difficult to understand the panic lest the United States get drawn into a vast war in China. For a century and a half, Western powers have waged wars with and within China without ever being dragged into such an imagined morass—the reason being that the Western powers always operated from the sea base and were always able to apply or withdraw pressure as the political ends seemed to dictate. It was only the Japanese, who set out to conquer the country, who got bogged down in a Chinese continental war—and, as we discovered in 1941, even they were not bogged down as badly as we had assumed.

Finally, Korea is, undoubtedly, a "peripheral" action, and an application of its lessons elsewhere might well produce more of them. But in any policy of containment it is the periphery which is vital. Total wars cannot be won or lost on the periphery; but we have not yet reached total war, and it is the whole aim of the containment policy to insure that we never shall. If we do not use the great forces we now have, with skill and resolution and unity of plan, to hold the periphery, then all we can look forward to is the total war, for which our forces are as yet admittedly inadequate.

The plain consequence of all this is not to rebuild "sea power" into a new fetish, but to put a much greater emphasis on sea communications, sea-borne weapons (in which one may well include the amphibious Marines), and sea-based combined operations than has hitherto been accorded them. It would be better, of course, to have the power on the ground, where ultimately it will be needed. To some extent, the argument has run parallel here with arguments of certain British critics in the interwar period, who held that with the mobility and striking power

conferred by her ships, aircraft, and tanks, Britain could sufficiently control events on the Continent without an undue commitment of men. As a general theory of war it had its flaws. But as an interim policy, under conditions such that the men cannot quickly be provided, it is not to be despised. And even in considering another general war, the sea—always assuming that it is used in proper combination with all other services operating in all other elements—has its uses.

Probably the best way to prevent another general war is to establish a ground power in Western Europe strong enough to insure that any Soviet attempt to overrun it would prove unprofitable. If the attempt, nevertheless, should be made, there would be other ways in which to paralyze the thrust besides either reinforcing on the Rhine or dropping atom bombs on Moscow. Professor John A. Lukacs* has pointed to the comparatively narrow throat between Königsberg (Kaliningrad) and Odessa through which all Soviet effort toward the West has to be channelled. This space between the Black Sea and the Baltic is only 750 miles wide (no more than about twice the length of the Northern Korean border) and is further narrowed by the Pripet marshes. It is accessible by sea at both ends, with easy landing beaches for any power equipped with the ships and air cover to bring men to them, and with the amphibious forces to make good the foothold. Professor Lukacs also observes the rather remarkable sensitivity which Russia has always manifested toward any threat in either the Baltic or the Black Seas. No doubt one should not draw exaggerated conclusions from this. But here at least is a possible opportunity for a properly co-ordinated ground-sea-air team that might offer decisive results if a third world war should be joined. It might even—provided the naval as well as ground and land based air components necessary

* *United States Naval Institute Proceedings*, Washington, D.C., November 1950.

to take advantage of it were available—have a more important effect than the atom bomb in averting such a catastrophe.

Conclusion

"Sea power" as a concept may have outlived its usefulness. The sea, as a great highway of both aggression and of defense, as a platform and base for weapons which can now range far beyond its limiting coast lines, and as an element over which complete corps and even armies can now be maneuvered, deployed, or withdrawn (as was once, of course, impossible) remains a tremendous military asset, and an asset largely in the hands of the West. But, as has been said, it is an asset of value only as it is properly invested in conjunction with all the other

assets at hand. Much nonsense was once talked about contests between the "mastodon and the whale" (Russia and Britain), to which some, in later years, have added the "eagle" as a third member of the cast. A mastodon obviously never could have fought a whale, nor could an eagle do much about either. Modern warfare is beyond such absurdities. All the arms and services today are caught in the same matrix; all are, to some extent, "triphibious," their common problem is how to use the capacities of each to the best effect in a total combination. It must, for the Western powers, be a combination in which the sea takes important place, not as "sea power" but as a vehicle for that national power which can best employ the advantages which the ocean offers.

Indispensable as a strong Navy is, it must operate as a teammate of the other armed services. Our concept of national defense is established on the amply demonstrated theory of balanced forces. Therefore, to extol one service to the belittlement of another is to render a disservice to both.

Secretary of the Navy Dan A. Kimball

A Navy, mobile and ready, is an instrument particularly well adapted to the maintenance of force on defensive frontiers far from home.

Admiral William M. Fechteler

Attach or Support?

Lieutenant Colonel Robert E. Coffin, *Artillery*
Instructor, Command and General Staff College

YOU have just stepped into the command post of the 20th Infantry Division when you hear a bellow like an elephant in pain. Startled, you turn to the division G3 with an inquiring look. He grins and whispers to you, "Another corps artillery group commander is losing the old fight with the general."

Through the thin partition you hear a voice say, "But general, I was ordered to *support* your division; I was not *attached* to it. I don't come under your command."

Again a bellow, and the words, "Colonel, I've been in the Army for 33 years—I know there's no difference between attached and supporting missions. And now, after you get your guns unlimbered, send all your trucks down to my quartermaster. he needs help in hauling rations and gasoline."

Combat Support Missions

Instead of an artilleryman, the colonel could have been an engineer, or an armored, chemical, signal, or transportation corps officer. Any arm or service that renders *combat support* can be assigned its mission by the use of one of two terms: *attached* or *support*. The artillery further breaks down *support* into *direct support*

and *general support* and uses the additional term of *reinforce*.

The fundamental meaning of attached and support is the same to all arms and services, so let us consider only the artillery of an infantry division in examples of the application of these missions to various situations. In each situation, you are the Commanding General, 5th Infantry Division.

First Situation

The enemy launched a general offensive without a declaration of war. The I Corps, composed of the 5th and 6th Infantry Divisions and the 10th Armored Division, is to defend a sector along the Green River. The 10th Armored Division is the corps covering force and has the mission of holding the enemy north of the Green River for 3 days.

The 5th Infantry Division includes the 13th, 14th, and 15th Infantry Regiments and the 17th, 18th, and 19th Field Artillery Battalions (105-mm howitzer) and the 20th Field Artillery Battalion (155-mm howitzer). The division staff is planning the defense of the sector. The G3 recommends an organization for defense as shown on Figure 1. He further recom-

All commanders must understand the responsibilities and implications of the terms 'attached,' 'support,' and 'reinforce.' They then will be better prepared to assign missions for their combat support elements

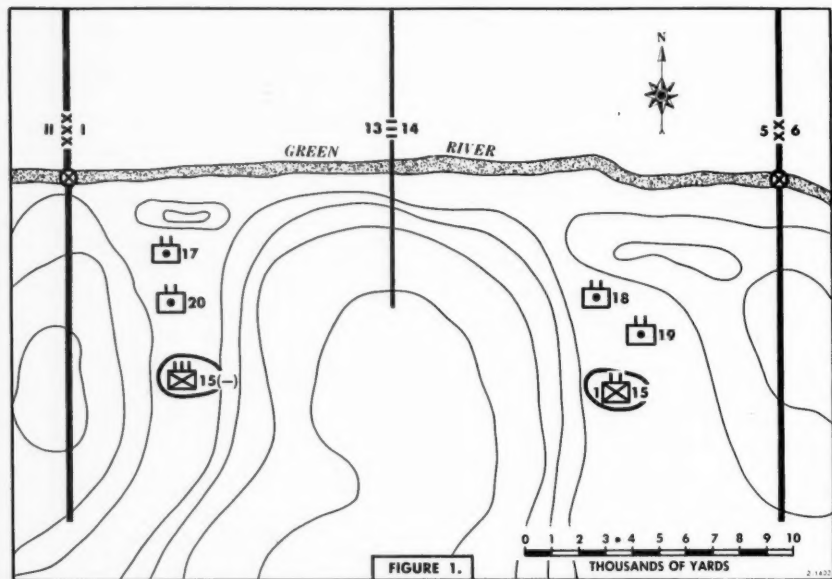
mends that the 17th and 20th Field Artillery Battalions be attached to the 13th Infantry, and that the 18th and 19th Field Artillery Battalions be attached to the 14th Infantry.

Do you approve your G3's recommended organization for combat? Why?

Second Situation

The I Corps successfully defended along

17th Field Artillery Battalion provide direct support for the 13th Infantry, that the 18th Field Artillery Battalion provide direct support for the 14th Infantry, that the 19th Field Artillery Battalion render general support and reinforce the fires of the 17th Field Artillery Battalion (the main effort of the division will be made by the 13th Infantry), and the 20th Field Artillery Battalion provide general sup-



the Green River until sufficient strength was built up for the United States forces to take the offensive. The 7th Infantry Division was attached to the I Corps. A new corps relieved the I Corps of the responsibility for the east half of the sector. The 5th Infantry Division was instructed by the I Corps to plan a crossing of the Green River in conjunction with the 6th Infantry Division. The G3 has prepared a plan to seize the corps bridgehead line in the 5th Infantry Division zone as shown on Figure 2. He recommends that the

port for the division.

Do you approve your G3's recommended organization for combat? Why?

Third Situation

The I Corps crossed the Green River and breached the enemy's main defense position. It is now planning a pursuit and has instructed the 5th Infantry Division to prepare plans for the capture of town C. The G3 recommends a plan as shown on Figure 3, using a combat team composed of the 15th Infantry with the

19th Field Artillery Battalion and Company "C," 5th Engineer Combat Battalion, attached.

Do you approve your G3's recommended organization for combat? Why?

Discussion of Missions

Before you, as Commanding General, 5th Infantry Division, can answer the questions posed above you must be sure that you understand thoroughly the responsibilities of combat support units when assigned the missions of "attached," "direct support," "general support," and "reinforce." Even though the division artillery commander recommends the missions for the artillery battalions, it behooves you to be familiar with these terms.

Let us examine official publications for definitions of the words *attach*, *support*, and *reinforce*.

Special Regulations 320-5-1, *Dictionary of United States Army Terms*, dated August 1950, defines "attach," in part, as "To bind a unit or detachment temporarily to a command other than its assigned command. . . ."

Field Manual 6-20, *Field Artillery Tactics and Techniques*, dated May 1948, states:

63. ORGANIZATION FOR COMBAT. . . . When subordinate units of the division are operating independently, artillery should be attached to those units. . . .

65. DIRECT SUPPORT MISSION. Direct support artillery has the mission of supporting a unit of a command. . . . Direct support artillery is not attached to the support unit, but remains under the command of the higher artillery commander. It is not under the command of the supported unit commander, but its fires will not be taken away from the supported units except by authority of the division or comparable commander. . . . A unit in direct support maneuvers under artillery command so as to furnish maximum aid to the supported unit. . . .

66. GENERAL SUPPORT MISSION. General support artillery has the mission of supporting the command as a whole. It is held under the command of the artillery commander. . . . General support

artillery may be given a secondary mission of reinforcing the fires of another artillery unit.

67. REINFORCING MISSION. An artillery unit with a reinforcing mission receives calls for fire directly from the unit whose fires it is to reinforce. The reinforcing unit must be prepared to fire in the zone of fire of the reinforced unit, to answer all calls for fire from the reinforced unit when answering such calls will not interfere with a primary mission, to establish command liaison with, and to reinforce the observation of, the unit whose fires it is to reinforce. A reinforcing mission may be a unit's primary mission.

Three important problems that the division commander must consider when he attaches one unit to another, or places it in support, are: command relationship, liaison required, and communications required. Figure 4 shows, as an example, these problems, and how they are solved,

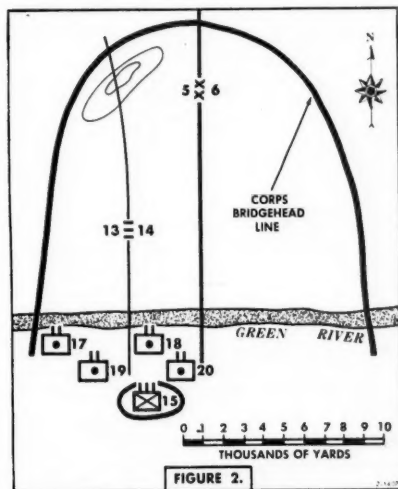


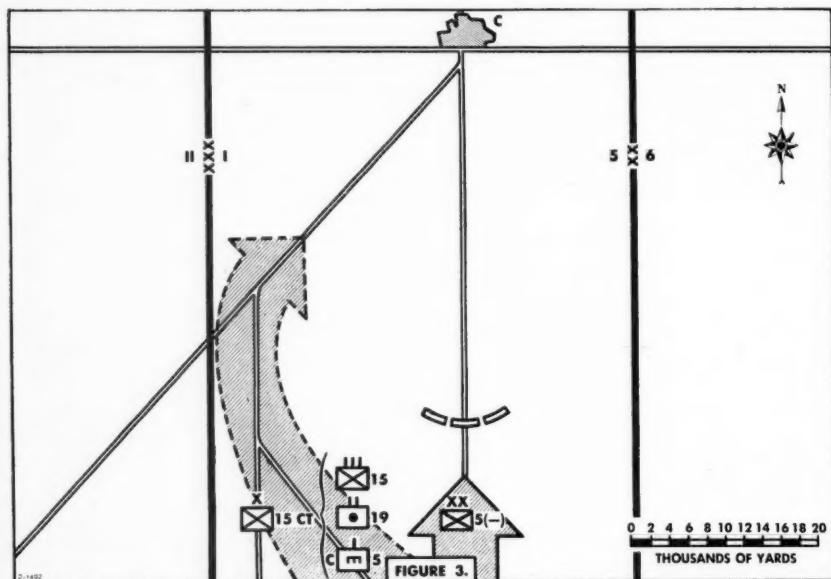
FIGURE 2.

for a light battalion of division artillery under various conditions.

As can be seen from Figure 4, the artillery battalion establishes liaison and communications with the infantry regiment both when attached or in direct support. The only major difference between a direct support mission and attachment is in the *command structure*. If the artil-

lery battalion is given a supporting mission, the battalion will displace on order of the division artillery commander. If the artillery battalion is attached, it will displace on order of the infantry regimental commander, thus giving the regimental commander the burden of determining when, where, and how his attached units shall move.

Each infantry regimental commander would have two artillery battalion commanders providing support, and he would have to effect a co-ordination of artillery fires. A solution to this problem is to attach the normal support artillery battalion to each infantry regiment and give each additional artillery battalion the mission of reinforcing the fires of one of the



A Solution to the First Situation

In this situation, the 5th Infantry Division is defending on a wide front. It will be difficult, although possible, for the division commander, through his division artillery commander, to retain centralized control. The G3 is correct, therefore, in attaching the artillery battalions which normally support the 13th and 14th Infantry Regiments to those regiments. However, to attach additional artillery battalions, in this case the 19th and 20th Field Artillery Battalions, to the 13th and 14th Infantry Regiments is incorrect.

attached battalions. This will require the attached artillery battalion commander to co-ordinate all artillery fires in the regimental sector.

Another possible solution is to attach an additional artillery battalion to the normal direct support artillery battalion which is itself attached to the infantry regiment. This will form "battalion-groups" of artillery and will vest the responsibility for the co-ordination of all artillery fires in one artillery battalion commander. This solution achieves the same results as giving the additional ar-

tillery a reinforcing mission. The formation of a "battalion-group," however, may upset the normal command relationship, whereas the reinforcement mission does not.

A Solution to the Second Situation

A special operation such as a river crossing presents, in addition to the technical and tactical considerations, the prob-

artillery battalions attached to the infantry regiments.

A Solution to the Third Situation

A pursuit usually results in a loss of centralized control. Since command posts displace rapidly over great distances, communications facilities are overextended, and the action takes place on wide frontages. In this type of operation, su-

IF A LIGHT FIELD ARTILLERY BATTALION IS	IT IS COMMANDED	LIAISON REQUIRED	COMMUNICATION REQUIRED
	By the infantry regimental commander	As directed by the infantry regimental commander—normally down to infantry battalion level	To infantry regimental command post
	By the division artillery commander	Infantry regiment down to battalion level	To infantry regimental command post
	By the division artillery commander	As directed by division artillery headquarters	As directed by division artillery headquarters
	By the division artillery commander	With the reinforced unit	With the reinforced unit
Attached to an infantry regiment			
In direct support of an infantry regiment			
In general support of the division			
Reinforcing the fires of a field artillery battalion which is in direct support of an infantry regiment			

FIGURE 4.

lem of the doctrine followed during division training. On Figure 2, the 5th Infantry Division is crossing the Green River on an 8,000-yard front. All the artillery can fire anywhere in the division zone of action and so centralized control of the artillery is feasible. Ignoring the problem of prior training practice, the G3's solution is the best one in this situation. If, however, in all prior river crossing operations a combat team formation within the division has been used, it should be continued for this crossing with

superior commanders influence the action by broad instructions. Tactical decisions usually are made by commanders of task forces who have been given the means to accomplish their missions. In this situation, the 15th Combat Team has been recommended by the G3 to be the encircling element of the pursuit force; the remainder of the division is the "direct pressure" element. You approve your G3's recommendation since neither your division artillery commander nor your division engineer can exercise centralized control

effectively over their forces operating with the enveloping combat team. The remainder of the artillery and engineers are kept under centralized control.

If it is found that additional artillery is necessary for the 15th Combat Team to accomplish its mission, the extra units should be attached to the 19th Field Artillery Battalion to form a "battalion-group."

Conclusions

Combat support units operate most effectively under centralized control. They are attached to units only when centralized control is not feasible, as in special

operations or when the units concerned are disposed over great distances.

Only one combat support unit of each type is either attached to or placed in support of a unit. All other combat support units of the same arm or service are attached to the supporting unit; however, artillery may be given a reinforcing mission in lieu of attachment.

All commanders must understand the responsibilities and implications of the terms "attached," "support," and "reinforce." They then will be better prepared to assign missions for the combat support elements.

NEXT MONTH

Main Articles

Co-ordination of United States Military and Foreign Policy by Brigadier General P. M. Robinett; and *The British Army Staff* by Lieutenant Colonel Walden F. Woodward are included among the main articles.

Foreign Military Digests

The foreign digests include "Morale as an Objective in Warfare" from *The Royal Air Force Quarterly* (Great Britain); and "Reflections on the Air Supply of Encircled Units" from *Flugwehr und -Technik* (Switzerland).

Books for the Military Reader

Reviews of *Economics of National Security* by George A. Lincoln, William S. Stone, and Thomas H. Harvey; and *Chinese Communism and the Rise of Mao* by Benjamin I. Schwartz are included.

Unit Property Accountability During Combat

Lieutenant Colonel Raymond C. Ashby, Jr., *Infantry*
Instructor, Command and General Staff College

IT WON'T work! You can't do it! Too much red tape! These and other answers in the same vein represent the thoughts of the vast majority of military personnel who desire to ignore property accountability in the combat zone and who, in so doing, draw supplies without the responsibility of accounting for their use. While this is feasible for certain types of supplies, the wastage inherent in the usage of Class II and IV items, requisitioned without regard to complete, accurate, accountability practices, will cost us dearly, not only in dollars, but in a lack of vital matériel when it is needed most.

The reported statement that a European army can be outfitted with that which a United States army throws away, or leaves behind while on the move, is not correct. If this were true, our units would never be ready for battle upon arrival in the combat zone. But we do know that our military personnel are guilty, in many instances, of "throwing away"—or if you do not like that term, then "forgetting"—items of organizational or individual equipment which they did not want to carry or to be bothered with in loading and unloading their vehicles.

Why do our military personnel waste, misuse, maltreat, neglect, or throw away

items of equipment? There are many reasons, but one stands out above all others—ignorance—ignorance that stems from a lack of a thorough understanding of and disciplined training in supply economy.

To have property accountability in combat—and we must have it—two general problems must be faced and solved. These are:

1. The training of all personnel to realize their responsibilities and then to carry them out.
2. The simplification of property accountability procedures in the combat zone.

Supervised Training

The first problem can be solved by a comprehensive training program and continuous command and staff supervision. Combat leaders, both commissioned and noncommissioned, must be made to realize that their responsibilities for property do not end when their units enter combat.

Let us look at the problems that must be overcome before the training objective—the individual's realization of his responsibility for property—is attained.

The training must point out to the individual that Government property is, in fact, his own; that he has paid for it

Supply in the Army is big business, and no business can function efficiently without a system of accounting for property and supplies. This concept must be understood, regardless of where the Army is employed

through taxes levied on him; and that the replacement of Government property other than that required by "fair wear and tear" will result in even higher taxes which will impose an even greater drain on his pocketbook. These points must be stressed constantly to military personnel not directly concerned with supply, as the enormous quantities of matériel used by the Army soon builds up the feeling that the United States is a limitless cornucopia. Our military personnel must be made to realize that the Army does carry what seems to be large inventories overseas so as to be able to supply our fighting forces with every material resource required to win battles and that the items are pushed forward as the need arises. However, these stocks are based on detailed calculations predicated on battle losses and normal replacements and cannot be used to replace supplies ruined by neglect or maliciously destroyed just to get a new item.

The training must overcome the spend-thrift tendencies of the American citizen. He lives in a land of plenty, and in his desire to have the best of everything, he sometimes throws away partially used items just to get something new. This attitude is rationalized by the feeling that "It's my money; I can spend it as I see fit." This frame of mind, unfortunately, carries over when he enters military service, and he justifies his actions, then, by saying, "The Government has plenty." Training, based on an appeal to the innate common sense and good taste of our people, will overcome these wasteful habits.

This training further must overcome our native distaste for salvaging items. An example of this which points up this form of wastefulness is the failure on the part of many to save newspapers and magazines. These items have a definite salvage value, but the normal citizen would rather burn them or throw them away than take the time to save them for

collection agencies or to sell them to junk dealers. The individual must be indoctrinated with the concept that he must turn back to supply channels all items which are no longer usable to him or for which he has no further need.

Training must point out to individuals that property responsibility and accountability does not cease when the unit enters combat. Just because units in World Wars I and II literally "dumped their property records overboard" when they embarked for foreign service is no reason to feel that this is the way it will be done again. It will *not* be done again, for we must avoid the possibility of scraping the bottom of the matériel bins, just as the judicious use of manpower will ensure savings in that valuable asset.

The feeling that this maintenance of unit property records during combat is a waste of time must be removed from men's minds, and the knowledge that property records are necessary and beneficial must be implanted instead. This can be done by showing the individual that by maintaining accurate and proper records and following proper supply procedures his unit will be better equipped to accomplish its mission. By following proper supply procedures, units will be issued what they need and, in the case of short supply, the units with the greatest priority will be supplied first, thus making the most effective use of available supplies. Following improper supply procedures usually results in some units having excess supplies at the expense of other units who are in dire need.

Training must build confidence in the supply system and in those who operate it. This confidence must exist not only in the combat zone, but must pervade all military personnel. Part of this confidence must be based on the fact that, under all conditions, forces in combat will have first priority on available supplies. This can be done by training and by simulating combat conditions during maneuvers where

abnormal loads on the supply system will bring home to the troops the fact that supply personnel can and do work around the clock.

Responsibilities of the Division G4

Supply procedures and property accountability are undergoing constant improvement at all echelons. The G4s and technical service officers are striving continually to move supplies forward in an amount sufficient to support operations adequately; to get the right item to the right place at the right time. The work of these individuals can be nullified by an inept performance on the part of the division G4, for it is below the division level that the greatest possibility exists for a breakdown of property accountability. Below the division level, items of supply are broken down and issued to the combat troops. Thus the division G4 has the last major supervisory control over supplies and services.

How can the division G4 accomplish his mission in solving the problem of bringing home to the individual the full realization of his property responsibilities?

1. Ensure that the G3 schedules adequate time in training programs for instruction, in addition to the basic instruction prescribed by Army Training Programs, in the care and preservation of individual and organizational equipment.

2. Ensure that the technical services give every possible assistance to unit instructors in preparing and presenting their instruction.

3. Organize, supervise, and conduct, if necessary, with the assistance of the technical services, classes for supply personnel in which proper supply and property accountability procedures are stressed.

4. Institute a schedule of inspections, staff visits, and spot checks to be made by the G4 and technical services staff officers to ensure that supply and property accountability procedures are being followed.

5. Utilize other staff sections to spot check one or two logistical items when they make their own staff visits and encourage them to report any discrepancies pertaining to supply and maintenance whenever they come to their attention.

6. Ensure that any directives or memorandums concerning supply procedures published by the division are accurate, concise, and free from ambiguities.

7. Give every assistance possible to subordinate units who are setting up their supply procedures.

After the division has established supply and property accountability record procedures, the G4 must be constantly on the alert to ensure that units and technical services conform not only to the letter but the spirit of the procedures.

The commanders must exert every effort to guard against the malpractices which can wreck the system. These are many, but a few of the worst are building up unauthorized excesses for "trading stock," outright stealing, known as "moonlight requisitioning," illegal trading, and maliciously grinding holes in matériel and calling it "fair wear and tear." Persons found guilty of such malpractices must be disciplined severely. By the same token, persons condoning such malpractices likewise must be disciplined. Nothing is more prejudicial to discipline—and that includes "supply discipline"—than to issue orders and not enforce them. By the same token, active and immediate corrective action against offenders will go a long way toward strengthening the system.

The basic honesty of the individual, and his desire to do a job well, must be exploited.

Simplifying Property Accountability Procedures

The second problem—that of simplifying property accountability procedures in the combat zone—is not as great as it seems.

Unit property records are concerned mainly with Class II and IV items, both organizational and individual. It is in the maintenance of accurate records, together with the preparation of requisitions, statements of charges, and reports of survey, which give the most trouble. The main complaint is that supply personnel do not have the time for paper work during combat. Other complaints, which include a lack of time to train personnel, the rapid turnover of personnel, and the low educational level of personnel, are not valid because many combat units of divisions did maintain property records during World War II.

If property accountability was maintained with the supply personnel authorized by Tables of Organization and Equipment of that time, certainly units should have no real complaint now as the present Tables of Organization and Equipment authorize each unit having administrative functions a warrant officer, with a military occupational specialty number of 2123, to act as the unit administrator. A description of this military occupational specialty states, in part:

Assists the company commander in supervision of supply matters including requisitions, receipts, storage, issue, salvage, and maintenance of supplies and equipment and related records. Conducts inventories of supplies and equipment both in the supply room and in hands of unit personnel and checks records of supplies and equipment.

* * * * *

Must be able to interpret and utilize tables of organization and equipment, tables of allowances, standard nomenclature lists, and other supply publications. Must have a basic knowledge of Army Regulations governing accountability, responsibility, and supply procedure, including necessary action in event of loss or damage to Government property. Must have a basic knowledge of supply channels serving the company.

Surely with a warrant officer possessing this knowledge in each company and battery, the proper maintenance of records, as presently required by Army Regulations, should be no problem.

The complaint is often heard that, during combat, units do not have the time to prepare requisitions in multiple copies for items needed in an emergency. This can be overcome by technical service supply agencies in the following manner:

1. Honor the unit's verbal or informal written requisition, and follow the supply action with normal paper work.

2. Prepare the necessary issue slips in one more copy than is required normally.

3. Forward one copy to the unit for its property records and forward the extra copy to the division inspector general who, on his next visit to the units, can verify that the transaction has been recorded properly.

The final major stumbling block in property accountability procedures, for the unit in combat, is the report of survey. Present Army Regulations are quite specific and detailed in outlining the method of preparing and processing this form. The report of survey procedure is sound, but it does require considerable time and effort. For units in combat, a requisition bearing the unit commander's certificate that the items requested are not in excess of authorized allowances is acceptable. On the same basis, why not accept his certificate for combat losses?

It will be argued that this procedure only opens the door for further abuses of the supply system. The answer lies in leadership. Supply is a command responsibility. The G4, through the technical services, can keep a check on the number and type of items requisitioned on the basis of combat losses. Abnormal amounts of items so requisitioned, or requests for items unlikely to be lost through combat, can be investigated in the same manner as high absent without leave or venereal disease rates, and disciplinary action taken when such investigations disclose any irregularities.

Summary

The statement has been made that no cost is too high to ensure victory. This should be amended to no *necessary* cost is too high to ensure victory. The division commander, with the assistance of the G4, his other staff officers, and subordinate commanders, must exert every effort to keep costs, in terms of property, down to those levels necessary for efficient operations.

No business can function efficiently without a system of accounting for property and supplies. This is especially true as regards its internal consuming agen-

cies. Supply in the Army is big business and the divisions comprise the vast majority of its consumers.

Superior leadership and thorough training and discipline in supply economy will dispel the ignorance or eliminate the wanton disregard that some individuals have for property responsibility and accountability.

Thus, for efficient functioning to ensure victory and to aid in conserving our diminishing natural resources, property accountability in units must be maintained during combat.

We do not acquire large stocks simply because we like to see them stacked up around us. On the contrary, we build up minimum stocks for emergency requirements, while at the same time creating the potential productive capacity which we would need should a general war break out.

Secretary of the Navy Dan A. Kimball

Our minimum military requirements are these: we must create the military power to prevent disaster in the event we are attacked; we must have in hand the immediate capability of quick and strong retaliation to the attacker; and finally, we must have a base upon which to build an overwhelming force, in conjunction with our allies, with which we can take up the offensive and overpower the aggressor.

General of the Army Omar N. Bradley

2 Mar 1952

Logistical Planning in the Development Of a Communications Zone

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MANY Army officers approach logistical planning with great apprehension, particularly if they have had no previous experience in this field. Perhaps this feeling is generated by the popular belief that the logistician is a man of mystery. Admittedly, logistical planning, like all planning, is slow and tedious work requiring a high degree of exactness, and, as in other planning, many undesirable situations can result from a poor plan. The higher the echelon concerned with planning, the more voluminous the planning becomes, but the basic approach is the same, regardless of the size of the command. As the basic approach to logistical planning for the development of a communications zone is examined, it should become evident that no mystery surrounds the logistical planning effort.

Logistical planning cannot be conducted independently. On the contrary, the G4 must work in close co-ordination with all the members of the special staff who will develop the detailed aspects of the logistical plan. However, the co-ordination he must effect with other members of the general staff often is overlooked. For example, the logistical plan for the support of tactical operations is, to a great degree, dependent on the tactical plan itself. Similarly, the tactical plan for an operation can be influenced by the logistical plan. Thus, the requirement for co-ordination

between operational planners (G3s) and logistical planners (G4s) is continuous.

The Situation

First, we will examine a hypothetical situation in which the planning for an offensive operation is involved. Presume that the Joint Chiefs of Staff have directed that the islands of Japan be invaded by United States forces now located in the Philippines. Assume that enemy forces have seized and occupied Japan. The main Japanese island, Honshu, will be invaded, and the enemy forces destroyed or driven from their island base. On D-day, three armies will be landed on eastern Honshu: the First Army on Beach "A," east of Tokyo; the Ninth Army on Beach "B," southwest of Yokohama; and the Seventh Army on Beach "C," northeast of Shimizu. (See Figure 1.)

The Fifth Army will debark over Beach "C" and, by D plus 50, will be positioned in the line west of the Seventh Army. All the armies will be under the command of the 12th Army Group whose headquarters will be established as soon as practicable in Tokyo.

Communications Zone Established

A Honshu Communications Zone has been organized in Manila, Philippine Islands. This communications zone has been given the task of developing plans for the support of these armies during

and after the assault. For the assault and the support of the initial phase of the operation, a theater directive has stated that the service support organizations will be under the command of the several army commanders. In accordance with the directive, the staffs of the armies and the Honshu Communications Zone have evolved the plan of attaching a base section to each of the assault armies (First, Seventh, and Ninth) to provide the logistical support until the initial phase has ended. At that time, when the army rear boundaries are established, these base sections will come under control of the Honshu Communications Zone, whose headquarters will be established in Tokyo. Notice that these base sections are organized from the start to function as communications zone sections and are attached to the army they are to support. They function under the command of the respective armies and in conjunction with the army service troops. When the army rear boundaries are determined, the sections are organized and ready to operate as part of a communications zone.

Co-ordination

To illustrate the co-operation required between logistical and operational planners, we shall examine certain aspects of preoperation planning for the invasion. As portions of the plan unfold, notice the many opportunities where co-operation is required between the officers on the com-

Assume that you are the G4 of the Honshu Communications Zone planning staff. The planning staff is located in Manila, Philippine Islands, and its mission is to prepare a plan for the logistical support of the tactical operation to be conducted on the island of Honshu, Japan. D-day for the invasion of Honshu is 4 months hence; it is now D minus 120. Your communications zone commander and the theater army commander are most anxious for you to determine whether the planned operation can be supported logistically. Your planning has progressed smoothly, and you anticipate no difficulty in providing the tactical forces with the necessary logistical support until D plus 150. Today, you are concerned with the support of the operation on D plus 150, and subsequent thereto. It may not appear realistic to suppose that on this date, D minus 120, you would be planning for operations subsequent to D plus 150 or 9 months in advance! However, planning for an operation, once begun, should be continued for all phases of the operation. As the concept for the latter phases of the operation is developed, the communications zone planning program is modified accordingly in order that adequate planning time may be allocated. Additional communications zone plans are prepared to meet this concept.

The Transportation Plan

Although the term "logistical support"

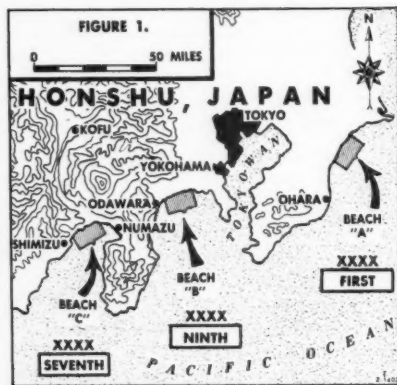
To the well-informed staff officer, there is no mystery connected with logistical planning. While detailed and exact, the application of clear, logical methods keeps its development simple and understandable

munications zone planning staff. However, it is important to remember that further co-operation will be effected between communication zone staff officers and their opposite numbers at theater army and army levels.

includes service, supply, evacuation and hospitalization, and transportation, you decide to examine first the transportation aspects of the logistical plan. If the planned transportation facilities are adequate, on D plus 150, to carry the neces-

sary tonnages to the forces being supported, then the operational plan need not be modified. On the other hand, if planned transportation facilities are inadequate to handle the tonnages required, additional transportation facilities must be planned and constructed, or the operational plan altered. Later, you will test the feasibility of the operational plan against the other aspects of the logistical plan.

The anticipated situation, as of D plus 150, is as indicated in Figure 2. Note that your headquarters will be located in

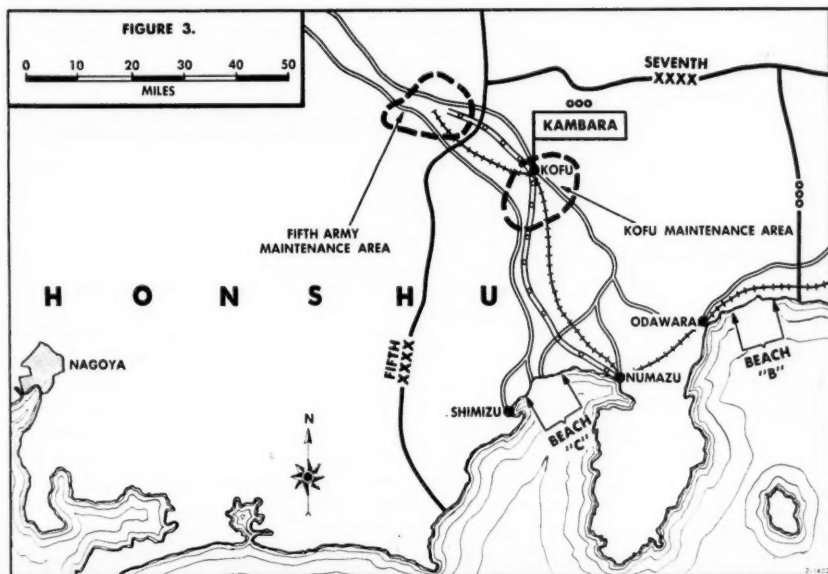
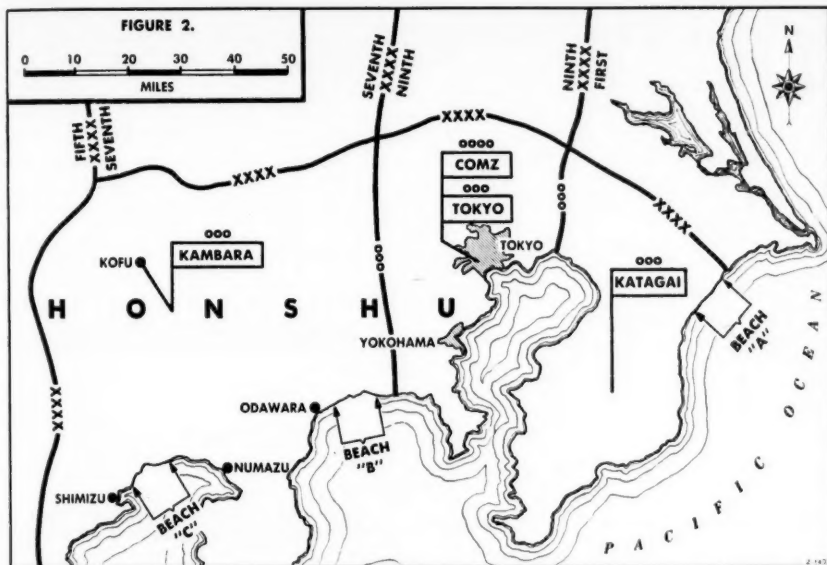


Tokyo. The communications zone will be composed of three base sections: Tokyo, Katagai, and Kambara. The Tokyo Base Section will provide logistical support for the Ninth Army; the Katagai Base Section for the First Army; and the Kambara Base Section for the Fifth and Seventh Armies. Transportation facilities are required to move tonnages from the ports and beaches of each base section inland to the base section maintenance areas located close to army rear boundaries, and, from there, to each army maintenance area. The situation presented here is not merely an assumption that you make in order to study transportation requirements. It represents a part of the operation plan being prepared by the theater army G3, for the status of the operation

on D plus 150 can be estimated only by the operation planners. The operational planners, therefore, have provided you with a *projected location of forces* for the phase subsequent to D plus 150. The enemy situation, the characteristics of the area of operations, and the anticipated rate of advance of the tactical forces being supported are studied, and the projected location of forces is assumed. This assumption will influence the various transportation aspects you are considering.

You decide to examine the planned transportation facilities in the Kambara Base Section to be used for the hauling of tonnages from its ports and beaches to the base section maintenance area, and then on to the Fifth Army maintenance area. The communications zone engineer plans to construct one 6-inch pipe line from the port of Numazu to the Fifth Army maintenance area by D plus 150. The transportation section estimates that one single-track railroad can be placed in operation between Odawara and the Fifth Army maintenance area, and that sufficient construction material and personnel will be available to repair and maintain two medium-condition highways between Beach "C" and the Fifth Army maintenance area (Figure 3). All these facilities—the pipe line, railroad, and highways—pass through the Kambara Base Section maintenance area located at Kofu. With the information furnished by operational planners (the projected location of forces by phases), and the planned transportation facilities, you now are ready to test the adequacy of those facilities to support the planned operation. When you complete your analysis for the Fifth Army, which is being supported by the Kambara Base Section, you will test the feasibility of the transportation plan for each of the remaining armies being supported.

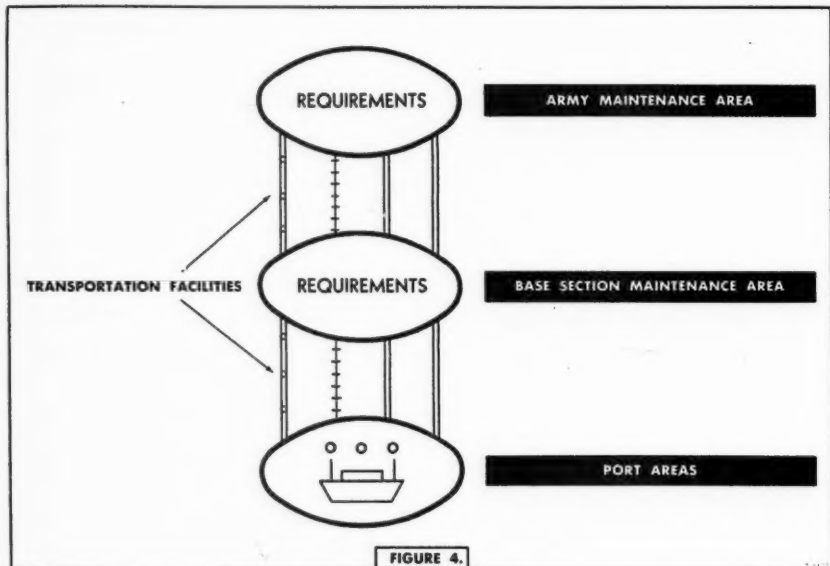
By constructing a simple diagram (Figure 4), you can reduce your problem to its simplest form. The Fifth Army mainte-



nance area will have tonnage requirements as well as the base section maintenance area located at Kofu. As the planned transportation facilities, from the beaches and ports to the Kofu maintenance area and from the maintenance area to the Fifth Army, are one and the same, obviously, the total tonnage requirements for both maintenance areas will con-

1. Daily maintenance (dry cargo) factor—.5 long tons per man per month.
2. Petroleum, oil, and lubricants factor—.25 long tons per man per month.
3. Civilian supply tonnage factor—.2 long tons per civilian per month.

In addition to applying these experience factors to the projected troop strengths to determine daily tonnage re-



stitute the total transportation requirement.

Supply Requirements

Supply tonnage requirements are based on experience factors which have been computed for similar operations conducted earlier, or, perhaps, in another theater. These experience factors should be modified by the G4 to reflect the significant differences between the operation for which the factors were computed and that for which you are now planning. For this problem, we will use the following experience factors:

quirements, you also must compute the tonnage requirements which will provide a build-up for reserve supplies. Let us assume that the communications zone commander has decided to build up reserve supplies in the Fifth Army maintenance area at the rate of 1,000 long tons a day until a 10-day reserve supply level has been established. The communications zone commander also has directed that a 20-day level of all classes of supplies except petroleum, oil, and lubricants be built up in the Kofu maintenance area for all military forces being supported; this build-up is to be completed by D plus 180.

In addition to the projected location of forces by phases, the G3 must provide you with the projected troop strengths of the forces being supported by location. By applying the supply tonnage factors to the troop strength being supported, you can compute the tonnage requirements by location. The G3 has provided you with the following projected troop strengths,

strengths which must be supported and estimates that 400 long tons of civilian supplies a day will be required in the Kofu maintenance area.

You now can proceed with simple computations to arrive at the daily supply tonnage requirements for the area you are considering. The computations are as follows:

Fifth Army Maintenance Area

$$\text{Daily maintenance (dry cargo)} = \frac{234,000 \times .5}{30} = 3,900 \text{ long tons}$$

$$\text{Petroleum, oil, and lubricants} = \frac{234,000 \times .25}{30} = 1,950 \text{ long tons}$$

$$\text{Daily build-up (reserve supplies)} = 1,000 \text{ long tons}$$

$$\text{Total tonnage requirements to support Fifth Army} = 6,850 \text{ long tons per day.}$$

Kofu Maintenance Area

$$\text{Daily maintenance (dry cargo)} = \frac{52,000 \times .5}{30} = 867 \text{ long tons}$$

$$\text{Petroleum, oil, and lubricants} = \frac{52,000 \times .25}{30} = 434 \text{ long tons}$$

$$\text{Daily build-up (reserve supplies)} = \frac{286,000 \times .5 \times 20}{30 \times 30} = 3,178 \text{ long tons}$$

$$\text{Civilian supplies required} = 400 \text{ long tons}$$

$$\text{Total tonnage requirements of the Kofu maintenance area} = 4,879 \text{ long tons per day.}$$

by location, for the period beginning D plus 150:

Fifth Army—234,000.

Kofu maintenance area—52,000.

Most of the supplies to be transported are for military use. However, small amounts of supplies usually are needed for civilian consumption. Civilian supplies are limited to those which will be required to prevent civilian unrest which could jeopardize the success of the operation. Assume that previously you have given the G1 or the military government officer the civilian supply tonnage factor. The military government officer applied the factor to the anticipated civilian

By applying these computations to the diagram that you previously constructed, you will have a clear picture of the supply requirements by location (Figure 5).

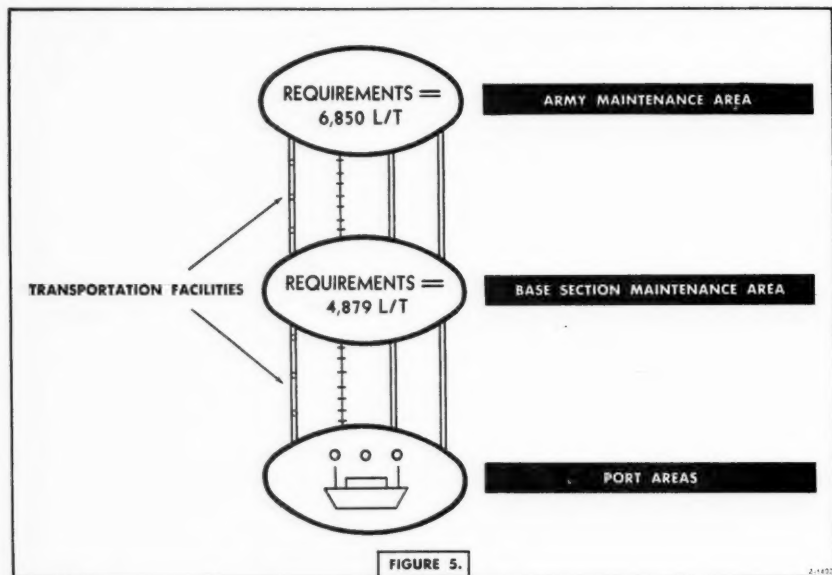
Balance Supply Requirements Against Transportation Plan

Having determined the tonnage requirements by location, you proceed to examine the transportation plan for adequacy. The transportation section can furnish you with an estimate of the capacities of the planned transportation facilities. This estimate is based on a detailed analysis of the characteristics of the area of operations, the amount of equipment avail-

able, and the anticipated availability of labor. For this problem, assume that the quoted capacities are the same as those found in paragraph 289, Field Manual 101-10, *Organization, Technical, and Logistical Data*, dated August 1949:

1. One single-track railroad can move 3,570 long tons a day.

be adequate to move the 6,850 long tons required, since the total capacities of the transportation facilities are 8,920 long tons a day. However, these same facilities, operating between the ports and beaches of the Kambara Base Section, will be inadequate to handle the total tonnages—11,729 long tons a day—for all



2. One medium-condition highway can move 2,230 long tons a day.

3. One 6-inch pipe line can move 890 long tons a day.

Place these estimated capacities on your diagram in order that the planned transportation facilities may be compared with your supply tonnage requirements (Figure 6).

You now have completed the mechanics of your study of planned transportation facilities, and, from your simple diagram, certain conclusions may be drawn. Note that the transportation facilities being planned from the Kofu maintenance area to the Fifth Army maintenance area will

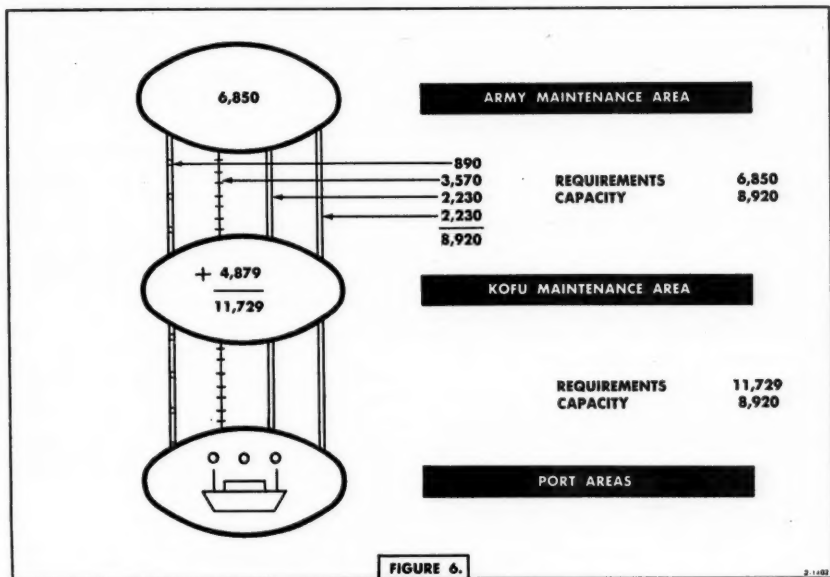
forces being supported from the Kofu maintenance area.

The next step in your analysis of the transportation plan is to apply the same steps to each of the remaining portions of the plan. The tonnage requirements for the Seventh, Ninth, and First Armies must be computed. In each case, you will apply the supply experience factors to the projected troop strengths in order to determine supply requirements by location. A diagram similar to the one used for the Kofu and the Fifth Army maintenance areas can be used for each situation. When this step is completed, you will have an over-all picture of the trans-

portation plan, superimposed on the operation plan, for the period subsequent to D plus 150.

The complete picture of the transportation plan may, in itself, solve the problem concerning the transportation of required tonnages from the Kambara Base Section ports and beaches to the Kofu maintenance area. Possibly the planned trans-

ined in great detail to test their validity. Perhaps the planned surface transportation can be augmented by air supply. Other courses of action which might be considered are to extend the build-up of reserve supplies over a longer period, or to reduce requirements for civilian tonnages. A decision to recommend the adoption of one of these or other courses of



portation facilities for the Tokyo or Katagai Base Sections are more than adequate to handle the supply tonnage requirements. If this is the case, detailed plans of the engineer or transportation section can be modified by diverting a portion of the planned transportation facilities from the base section with the excess to the Kambara Base Section.

If the completed picture fails to present a solution to the problem, you must consider other ways to alleviate this shortage. Perhaps the supply tonnage experience factors could be reduced. Certainly, these broad planning factors should be exam-

ined in great detail to test their validity. Perhaps the planned surface transportation can be augmented by air supply. Other courses of action which might be considered are to extend the build-up of reserve supplies over a longer period, or to reduce requirements for civilian tonnages. A decision to recommend the adoption of one of these or other courses of

action should be withheld pending a full investigation of its implications, implications which must be examined by each of the general and special staff sections having an interest in them. The adoption of one or more of these courses of action should produce a sound solution to the problem.

The manner in which the transportation plan was examined in the foregoing example stresses simplicity. There are many methods other than that which has been illustrated by which the same results may be attained. However, the logistical planner should make every effort to re-

duce his planning problem to a simple form. In addition to diagrams, such as those illustrated by this problem, he may employ graphs or sketches to block out his logistical planning task. Every individual has his own way of doing things, and he should use the means which suit him best.

Other Aspects of Logistical Planning

As the transportation plan was analyzed in order to ascertain the ease or difficulty by which the operation can be supported logistically, so also should the plans for service, supply, and evacuation and hospitalization be examined. These logistical functions also must be designed to provide complete support for all phases of the coming operation. By the same token, the plans for each logistical function must be reviewed continually by the G4 to make certain that new developments in the operation plan or concept are reflected in them.

Summary

In this article, it was not intended to cover all the aspects of logistical planning that one would expect to encounter in the development of a communications zone. Logistical planning in the development of

a communications zone is undertaken in much greater detail. However, it is not mysterious; its many ramifications can be kept simple and understandable. Logistical planning and operational planning are interdependent. Although the logistical planner must make every effort to support the plan of operations, there are times when the latter plan must, of necessity, be modified in order that it can be supported logistically. Therefore, the plan or concept of operations must be disseminated to logisticians early. The development of a logistical plan for the communications zone should commence as soon after the operation is conceived as is practicable. The more quickly the logistical plan can be fully developed the more time will be available to check all aspects of the plan at the communications zone level. Subordinate sections of the communications zone as well as the tactical commands being supported also will benefit from a plan which is developed early. The communications zone planning program must ensure that the final plan will cover all phases of the operation which can be foreseen. As new operational phases are conceived, the planning program may be modified accordingly.

A perusal of available military and civilian publications, during the past 3 months, indicated that material from the **MILITARY REVIEW** was reprinted in the following countries:

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The Editor

CONFLICT OF COMMAND IN THE RED ARMY 1918-1942

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The views expressed in this article are the author's and are not necessarily those of the Department of the Army or the Command and General Staff College.—The Editor.

ONE of the most outstanding characteristics of the Soviet state has been the dual nature of all its enterprises: a functional, administrative organization coupled with a political superstructure. Almost every conceivable Soviet institution contains this parallel dualism. A factory, for instance, has the usual executive and technical staff functioning alongside a completely separate and distinct political staff, the principal duties of which are the maintenance of ideological purity among the personnel and surveillance of the work to detect possible sabotage or "wrecking."

True to the universality and uniformity with which they apply their ideas and principles, the Communist leaders established this system in the Red Army also. But, as cumbersome as dual command might be in a factory, from the point of view of Western concepts of warfare, it could be fatal in an army. Those ultimately responsible for the Red Army, the Communist leaders (successively, Trotsky

and Stalin), were forced constantly to balance the political advantages of the system for the Communist Party against its military disadvantages. Consequently, through the years since the Revolution, periodic fluctuations between the two principles of dual command and single command have been a characteristic feature of the Red Army.

In the past 33 years, the relative stress laid on dual command at a given time seems to have constituted a barometer of the political stability (in terms of loyalty to the ruling clique of the Party) of the Red Army. It is believed that an examination of the past record of dual command is a necessary part of any intelligent analysis of the morale factor in the Soviet Army of today. To trace this phenomenon, to indicate, as far as possible, the conditions causing each swing of the pendulum, is the purpose of this article.

The attempted solution to the basic problem of maintaining the political loyalty of the army was the same in Russia in 1918 as it was in France in 1793. In each case, trusted members of the dominant revolutionary political group were sent out to the armed forces in order to bolster discipline and morale and, espe-

The abolition of the commissar system in the Soviet Army, because of experience gained during military operations, resulted, in 1942, in the only practicable method for operating an army—unity of command

cially, to maintain a sharp watch on the army's political complexion, with special reference to the military commanders who, for the most part, had served under the former regime. The functions of these two groups of men, separated by a century and a quarter, were essentially similar even though their titles differed. The men of 1793 were called "representatives on mission," while those of 1918 were termed "commissars." Similar, also, was the basic problem created by their presence: duality of command. While France had only a short acquaintance with this phenomenon, because of the relatively brief period of the dictatorship of the *sans-culottes*, in Soviet Russia it has had a long and checkered history.

Historical Background

Contrary to what might naturally be expected, the Russian institution of the military commissar did not originate with the advent of the Bolsheviks in the October Revolution (7 November 1917), but rather with the Menshevik government of Kerensky. This was deemed necessary because the old imperial army, which was supposed to continue fighting the Germans, was disintegrating into chaos and an almost complete lack of discipline. The real power in the army was the extralegal revolutionary committees in the various military units which owed their prime allegiance to the Bolshevik-dominated Petrograd Executive Committee. Since the Bolsheviks were at work busily dissolving the discipline which the Kerensky government was striving desperately to reinforce, the political loyalty of the military leaders and troops was not so much a concern at this juncture (as later was the case under the Bolsheviks) as was the vital necessity to strengthen, or rather to recreate, discipline in the army, and to attempt to instill again into the troops a proper respect for their constituted officers.

However, in spite of valiant efforts on

the part of the Provisional Government commissars, they were not able to stem the tide of dissolution, for, unlike their successors, the Bolsheviks, they were not in a strong position. Not only were they supporting the imperial officers, who were hated by the troops, not only were they attempting to inject discipline into an army which was determined to cease to exist, but, to make matters worse, their authority was nowhere codified. Indeed, there was not even a decree to support their assumption of power. They were intended as assistants to the commanders and they failed as completely as the latter in the ensuing chaos.

Bolsheviks in Power

On the eve of the advent of the Bolsheviks to power, they installed their own commissars in military units, especially in the Petrograd area. The Bolshevik Military Revolutionary Committee issued a proclamation, on 5 November 1917, explaining that commissars were being appointed in the military units of Petrograd and its environs, and that the people were to consider a military order invalid unless approved by these commissars. The uprising, on 7 November, spelled the end of the moderate Kerensky regime and the advent to power of the Bolsheviks through the immediate instrumentality of the Petrograd Soviet and the Military Revolutionary Committee.

Creation of the Red Army

Since the former imperial army continued to degenerate into chaos, and in the face of a renewed German threat, Lenin decided to halt demobilization, disband the Red Guard, and build a new army. The basic principles for the formation of the Red Army were laid down in a decree of 28 January 1918, and the first units of this new force defeated the Germans in a local engagement on 23 February. This latter date has been taken as

the anniversary of the creation of the Red Army.

Functions of the Commissar System

As a concomitant and subordinate development to the creation of the Red Army, the system of military commissars was continued and expanded. The regularization of the commissar's position was an early act of the Government, thus avoiding one of the weaknesses of the Kerensky commissars. In essence, as enumerated by *Time* in the 19 October 1942 issue, the system was dedicated to the following functions:

"1. To check on officers' loyalty and honesty.

"2. To maintain high morale by explaining to the troops what they are fighting for.

"3. To organize study classes, discussion groups, lectures, and dramatic circles.

"4. To assist unit commanders and help make tactical decisions."

In the face of the German threat after 1 February 1918 and, later, of the menace from the White armies and the Polish campaign, the Bolsheviks realized their desperate need of trained military men. Consequently, they were constrained to utilize the services of the only qualified group available: the officers of the former imperial army. The old officers were recruited for the Red Army, to some extent, through flattery and soft words. In the main, however, they were recruited through force. In short, it would seem that the great bulk of these officers, who numbered approximately 50,000, were forced to serve the Bolsheviks to avoid political persecution and actual starvation for them and their families. Considering the means by which these officers were acquired and retained by the Bolshevik authorities for the Red Army, it is not surprising that one of the major reasons for the original utilization of commissars was to maintain a close surveillance over these men in the interests of the regime.

Relationship Between Commissar and Commander

The relationship of the commissar and commander was an ambiguous one. Each was, theoretically, supreme in his own field: the commander in purely military decisions, the commissar in administrative, political, and morale affairs. However, so preponderant was the power of the commissar, by the very nature of his office, stemming as it did directly from the center of political power, that the commander often was overshadowed even on technical matters. No order was valid unless signed by the commissar as well as the commander. This situation involved, obviously, a basic duality of command, a problem which has plagued the army of the Soviet Union from its inception.

The basic regulation defining the role of the commissar was issued on 6 April 1918. As concerns relations with the commander, the order required that the commissar be associated with the commander in all activities; that he receive jointly with the latter all reports and orders; and that no order was valid without the countersignature of the commissar. Upon the commander rested the responsibility for operational orders, the commissar's signature merely signifying that no counterrevolutionary activity was intended. Through the ensuing months, Trotsky chose a liberal interpretation of the order of 6 April in favor of the commissars. The Eighth Congress of the Russian Communist Party (March 1919) considerably strengthened the hand of the commissars by the institution of a system of attestations or service records. It virtually delivered the officers of the commissar's unit into his hands, since their future depended on his giving them a clean bill of political orthodoxy in the portion of the attestations reserved for the commissar's comments concerning their political reliability. Administration and supply were placed under the joint jurisdiction of the com-

mander and the commissar, and the commissar was empowered to arrest, inflict summary punishment, and bring offenders to trial. The inevitable struggle for authority between the two rival figures in the military structure gave rise, after the Civil War, to grave differences of opinion and soul-searching concerning the



Leon Trotsky led the Red Army during and after the Russian Civil War.—Acme photo.

fundamental nature of military organization and policy.

In the beginning of Bolshevik rule, there was no specific regulation requiring that the commissars be Communists. The only requisite was that they should be recruited from "irreproachable revolutionaries." However, as the duties of the commissar broadened, from a close supervision of the military commanders to responsibility for all political propaganda and instruction in the army, it was inevitable that membership in the Party should become mandatory.

The basic order concerning commissars, that of 6 April 1918, provided for the establishment of the All-Russian Bureau of

Military Commissars. This office, acting as co-ordinator for the commissars of all the forces of the Red Army, published instructions for the commissars' guidance, and called congresses of commissars when the occasion warranted. With the great enlargement of the scope of the commissars' responsibilities, the Bureau was replaced by the Political Department of the Revolutionary Military Council of the Republic, headed by a member of the Central Committee of the Communist Party. Later, in May 1919, the title was changed to Political Administration of the Republic (PUR).

The highest ranking military commissars, those of the Supreme Military Council, according to the order of 6 April, were to be appointed by the Council of People's Commissars, while those of the district and regional military councils received their appointment through the Supreme Military Council in conjunction with the local councils. The armies and fronts of the Red Army were commanded by these councils, called "Revolutionary Councils of War," composed of the military commander and one, and sometimes two, commissars. There were commissars, also, on the corps and division level, as well as further down the chain of command in the regiment, battalion, and even company.

It is clear from the foregoing that the commissars, who acted as co-commanders, were not within the regularized chain of military command. They were in the army, but not of it, and their great power was wielded under the aegis, not of the Red Army, but of the Central Committee of the Party through the main Political Administration.

Transition Period

By 1921, the heroic period was over, and the Red Army began the process of transition from the most important institution in the Soviet state to a peacetime army, competing on an equal basis

with other state enterprises. Trotsky did not survive in power long enough to complete the postwar reorganization, and this task was brought to its conclusion by his successor, Mikhail Frunze, who began to function as head of the Red Army early in 1924.

A distinctive characteristic of the transition period was the ambiguity of the relationship of officers and men. As so often occurs in such cases, frequent conflicts were the result. Not only was there this officer-soldier antipathy, often complicated by the attempted interference of the Party cells in matters of military command, but also the perennial struggle of commander and commissar. During this period of readjustment, then, serious attempts were made to resolve the latter conflict by instituting unity of command.

During the course of the Civil War, the conflict between the commanders and commissars, which one might safely term as inevitable, increased in intensity. The theoretical spheres of jurisdiction of the two were in no wise distinct on a practical basis. Almost inevitably, the stronger personality became the real power in the army unit. In the great majority of cases, the commissar assumed this role, encroaching steadily upon the activities of the commander. Indeed, many commissars had a very active desire to function as a leader in the full military sense. Consequently, there was much complaint in Party circles of the tendency of commissars, in their eagerness to immerse themselves in purely military affairs, to ignore their duties of political disciplinarian, mentor, and leader. At times, the commissars also came into violent collision with the soldiery.

Trotsky early was cognizant of the commander-commissar struggle and attempted, by an order of 5 August 1918, as quoted in Erich Wollenberg's *Red Army*, to clarify the situation:

Re the participation of officers in White Guard revolts, I note that quarrels between commissars and military leaders have lately been increasing. From

the evidence at my disposal, it is apparent that commissars often take a directly wrong line of action, either by usurping operative and leadership functions, or by poisoning the relations between officer and commissar by a policy of petty quibbling carried out in a spirit of undignified rivalry. At the same time, it not infrequently happens that the presence of the commissar does not prevent the military commander from deserting to the enemy.

In view of these circumstances, I must bring the following facts to the notice of all commissars:

(1) A commissar is not there to give orders, but to watch. He must watch carefully and sharply.

(2) A commissar must behave respectfully to military experts [commanders] who fulfill their duties conscientiously, and must protect their rights and human dignities by all the means of the Soviet authority.

(3) A commissar must not seek quarrels, but if he finds it necessary to intervene, his intervention must be effective.

(4) Offences against this order will be subject to severe penalties.

(5) A commissar who fails to prevent the desertion of a commanding officer will have to answer for his negligence with his own life.

Trotsky should have realized that even the minute control and supervision of the commander by the commissar, made imperative since the latter's life depended upon the former's loyalty, would cause almost as much conflict as when the commissar issued orders independently of the commander.

Tendency Toward Unity of Command

The growing tendency of the broadening of the powers of the commissars led to a campaign for the complete abolition of the commissar, leaving to the political departments merely the dissemination of propaganda, political instruction, and guidance. Trotsky seems to have taken a middle position in this controversy. Probably he hesitated to change a system in the midst of the Civil War which, at least, had been functioning.

Trotsky himself, in his interpretation of the order of 6 April 1918, concerning the place and function of the commissar, struck the keynote of the trend in the nature of command in the Red Army for several years after the close of the Civil

War. In substance, Trotsky had ruled that the order of 6 April did not mean that the commissar was not to take an active interest in military affairs and, in addition, there was no impediment to the commander's active interest and constructive participation in the political work of the unit. This was the essence of the ideal,



Mikhail Frunze was appointed head of the Red Army in 1925, but died the same year.

which was to grow up in the post-Civil War period, of preserving political activity in the army, but providing, at the same time, for unity of command. Trotsky hoped to create a synthesis of the two antitheses—commissar and commander—by the training of the former and other strong Communists in the military sciences and arts, thus creating a hybrid, or rather, forming a class of commanding personnel who combined both functions in one person. Thus, there came into being the principle of one-man management, typified by the commander-commissar.

Mikhail Frunze, who succeeded Trotsky as head of the Red Army in 1925, organ-

ized the program looking toward unity of command throughout the army. The principles laid down by Frunze, in this regard, were in force in the Red Army for the next several years, and were applied with varying degrees of success. In the main, according to Fedotoff White, author of the *Growth of the Red Army*, Frunze proposed two approaches to the attainment of unity of command in line organizations:

"1. Concentration in the person of the commander of not only combat, administrative, and supply functions, but of political guidance and education of the troops as well.

"2. Investing commanders with full powers in the spheres of combat, administration, and supply."

According to Frunze, the first plan, which provided for the creation of the "Red Commanders" previously adverted to, could be utilized only sparingly, since not even all the Communists among commanders could be expected to be capable of performing the work. However, it would seem that this combination gradually became predominant.

On 6 March 1925, the Central Committee of the Party issued a circular describing the two forms of command. In discussing the duties of the commissar under the second plan mentioned above, the circular stated that the commissar would surrender to the commander all administrative duties as well as financial functions. The commissar would retain the functions of political guidance and Party work, and would continue to shoulder responsibility for the moral and political welfare of the unit. Upon those commanders deemed worthy of trust, all duties and responsibilities devolved and, in accordance with the first plan, the position of commissar, *per se*, disappeared. This program was not applied to the navy, and the commissars functioned in that arm as before.

In 1925, Kliment Voroshilov was ap-

pointed head of the Red Army after the death of Frunze. The program inaugurated by Trotsky and Frunze was continued and, in 1927, Voroshilov had occasion to remark that progress toward unity of command was proceeding at a very satisfactory rate. Opposition to the program aiming at integration of command, however, certainly had not ceased by 1927, since Voroshilov, at the 4th Congress of the Soviets of the USSR, warned those who opposed the program.

New Relationship Between Commissar and Commander

About the same period, the Revolutionary Military Council, accepting, in theory, the principle of unity of command, published regulations concerning the new relations of commander and political workers, which Fedotoff White, in the *Growth of the Red Army*, lists as follows:

1. The commissars were not to sign orders, with the exception of those connected with political work.
2. The general political guidance of a unit was entrusted to the commander, should he be invested with plenary powers [in accordance with plan 1 of the original Frunze program]. The immediate execution of party-political guidance was to be in the hands of the commander's political assistant, under whose orders was placed the political personnel of the unit. The practical work in the party-political field was also to be carried out by that assistant.
3. The political assistant was to report to the commander about the political state of the unit, about the party-political work of the political personnel, and about "all basic directives received by him from the higher political organs."
4. The political assistant was to maintain a direct relationship with the higher standing political organs, as well as with the political personnel of the unit.
5. In case of differences between the commander and his assistants in matters concerning political work, the dispute was to be placed before the higher political organ, and its decision confirmed by the Revolutionary Military Council of the District.

It is palpable from this regulation that the political personnel had won the long struggle against unity of command, in substance, if not in form. Even in those units where the commander was accorded

plenary powers and where the commissar post was abolished, a very potent ghost of the latter office was recreated as the "political assistant." Although the commander was the latter's superior, the political assistant, it will be noted, was specifically authorized and instructed to communicate directly with the political echelons above his own. Finally, in the event of conflict between the commander and his political assistant over political work, the commander had no power of decision himself. Nor was the decision ultimately a military one. The political department in the higher echelon would decide the issue which would be confirmed by another, essentially political, organ, the Revolutionary Military Council of the District.

A vitally strategic position was held by the political organs in that the fate of the commanding personnel, in so far as promotions were concerned, virtually was controlled by them. This was true since they had representatives on every attestation commission. The advantage accruing to the political officers through this arrangement hardly can be overestimated. Fedotoff White asserts that the "promotion of commanders was thus greatly influenced, if not entirely controlled, by the opinion of them held by the members of the political organs of the army. Unless commanders were on good terms with the commissars, their chances for promotion were slim, to put it mildly."

On the eve, then, of the first Five-Year Plan, unity of command had experienced a definite retardation, and the political system of the Red Army, according to Dr. White, "remained a state within a state and endowed with a life of its own, not integrated with the rest of the armed forces." This development constituted a basic refusal on the part of the Bolshevik leaders to relinquish direct Party guidance and control of the Red Army.

What actual power the commissars lost

in the formal resumption of single command, they conserved through an increase in the number and scope of their activities, retaining their ultimate influence over the commanders, no longer through direct intervention in purely military operations, but through their virtual control over promotions and through the in-



Gamarnik had the task of keeping the army loyal during the first Five-Year Plan.

dependence of their position in relation to the commander. In addition, the commissars retained their influence in all types of military training, which certainly was a direct invasion of the commanders' jurisdiction.

Field Regulations of 1929

The new Field Regulations of 1929, with detailed instructions relating to the functions of the commissars, were in contrast to the regulations of 1925 which included practically no detail. The new regulations stressed, as the most important phase of warfare, the development of class consciousness in the troops

of the enemy thus creating mass defection in the ranks in favor of the army and state of the proletariat. The emphasis thus laid on political warfare, in opposition to the concepts of Trotsky, naturally enhanced tremendously the importance of the political organization of the army.

Jan Gamarnik was appointed Chief of the Political Administration in October 1929, as well as to membership in the Revolutionary Military Council of the Union. To him fell the task, by means of his vast organization, of keeping the army loyal and ideologically pure during the great stresses and political strife of the first Five-Year Plan.

The army remained loyal to the majority group in the Party during the Party struggles and other crises of the first Five-Year Plan, a matter which was of paramount importance to the dominant Party group, probably ranking in their minds above considerations of efficiency or development, *per se*. In the period under review, it would seem that the principal emphasis of army political work was not on surveillance of the commanders (that factor was present even though 49.7 percent of the commanders were Communists in 1928), but on the training, education, and political supervision of the masses of the army.

A Strengthened Red Army

The first Five-Year Plan had furnished the Red Army, albeit at the cost of tremendous sacrifices by the Russian people, with the proper sinews of war. Marshal Tukhachevski's drive for the mechanization of the army was bearing fruit. By 1934, the Red Army had been mechanized to a point comparable with the European armies. The year 1934 witnessed a number of changes in the Soviet armed forces. The standing army was practically doubled in size, to 940,000 men, and, in 1935, the number was raised to 1,300,000. On 15 March 1934, the commissariats of the army and navy were replaced by the

Commissariat for Defense. At the same time, the Revolutionary Military Council was abolished, its powers being transferred to the Commissar for Defense. Thus, at the top echelon, the collegiate (or council) method of army command and administration gave way to the principle of single command. In like manner, the collegiate system was discontinued throughout the army on every echelon of command, and, in keeping with the single command principle, its powers were transferred, at least theoretically, to the commander. In keeping with the new stress on single command, on 22 September 1935, officers' titles were reintroduced, along with a regular system of promotions. These titles were similar to those in European armies, except that, as yet, the title of "general" was not instituted, nor was "soldier" reintroduced, the troops still being termed "Red Army men."

With the disappearance of the collegiate system on all levels in the Red Army, the role of the commissar was attrited, and the concept of single command was riding the crest of a wave in the army under the leadership of Marshal Tukhachevski. However, this by no means indicated a cessation of political activity by the multitudinous servants of the Political Administration. In general, during this period, the men of Gamarnik's organization, although their political education and supervision function in no way abated, ceased to emphasize direct interference in the affairs of the military. Under Gamarnik's guidance, the commissars, along with the entire Political Administration, tended to become an integral part of the armed forces, rather than a completely foreign and independent element taking orders, ultimately, only from the Central Committee of the Communist Party.

Trend Reversed

A reaction to this state of affairs by the Party leaders was fairly certain, and

the trend toward unity of command was rudely halted with the coming of the crisis and purge in the Red Army. No clearer illustration exists for the mistrust and fear in which the Red Army was held by the Party leaders than the reinstitution, as a concomitant to the purge, of the collegiate system and the commissars in full rigor.

On 11 June 1937, the Kremlin announced the existence of a conspiracy in the army, led by the great Marshal Tukhachevski, Chief of Staff, to lead Russia into an alliance with an unfriendly foreign power—Germany. That Tukhachevski and his associates were guilty of



Tukhachevski led the fight for mechanization and single command in the Red Army.

treason, as alleged by the Kremlin, is open to grave doubt. Other reasons have been advanced by various writers for the holocaust which struck the army in 1937-38, and one of these is germane to our article. It is known that Tukhachevski was strongly opposed to political influence in the army, thus arousing the suspicion and

hatred of Party leaders. General Gamarnik, head of the Political Administration, also was opposed, as were many other Red Army leaders.

Reinstitution of the Commissar System

Almost exactly 1 month before the announcement of the arrest of Marshal Tukhachevski, General Gamarnik, and the other generals who were to be given a public trial, a decree of 10 May rein-



Josef Stalin and Kliment Voroshilov. Voroshilov became head of the Red Army after the death of Mikhail Frunze in 1925.

stituted the collegiate (or council) system of administration, and the commissar system, down through the regimental level in units of the line, in addition to all staff and administrative offices. The power of the commissar obtained whether or not the individual commander was in the category of "single command." This, of course, meant a complete reversal of the trend toward unity of command, forcing the Communist, proletarian commanders under the watchful eyes of the commissars, just as their Czarist predecessors had been. Lev Zakharovich Mekhlis, a member of the editorial board of *Pravda*, who had been Chief of the Press and Publish-

ing Department of the Central Executive Committee of the Communist Party, was appointed Vice Commissar for Defense in charge of the recently purged and politicized Political Administration.

The collegiate system, as reintroduced, provided for a military council at the military district, army, and fleet levels. This council was composed of the military commander of the district, army, or fleet; the commissar; and a deputy of the Party organization of the district. Although the commander presided at meetings of the council, the troops and army administrative offices were subordinated to the council, not to the commander. The result of this is obvious, in view of the fact that the council was composed of one military representative to two representatives of the Party. The orders of the commander were not valid unless countersigned by one of the Party members of the council.

The new and tremendously strengthened position of the commissar was regulated by the statute of military commissars, which was approved on 15 August 1937. The political and moral status of the unit, and military discipline, were equally the responsibility of the commander and commissar, as well as administrative and operational capabilities. The duty of the commissar, equally with the commander, to prevent counterrevolutionary activity in the unit, was stressed. Not only was the district military commander restricted in his activity by the necessity of a countersignature of one of his Party-oriented colleagues on the council, but the commanders of subordinate units—corps, divisions, and regiments—could not, of themselves, initiate an order, but had to obtain the signature of the unit commissar. Harold Denny, in a dispatch to *The New York Times*, quoted the Red Army's conception of the potent position of the commissar:

... Not the slightest event can take place in

the life of military units of which the commissar is not to be informed. The commissars will enter into all affairs of the regiment and will take part, without exception, in the elaboration of all orders issued by the regimental commander.

The system, as described above, remained in force during the ensuing period until the end of the Finnish War.

The major emphasis of the political organs was switched from the supervision of the peasant-soldiers, Komsomols, and Party units to a surveillance of the commanders just as rigorous as in the days of the Civil War. However, there was this distinct difference: a majority of the commanders now were themselves Communists. This setting up of Communists to watch Communists was symptomatic of Stalin's distrust of the commanding personnel, and thoroughly in keeping with the spirit of the purge. Hanson Baldwin stated, in an article in *The New York Times* of 20 February 1938, that "the Red Army, although in the full tide of reorganization and development as a military machine, has once again emphasized its strange dual nature, an army built upon political as well as military principles."

A Renewed Conflict

Scarcely surprising, then, was the rise of a new conflict between the commissars and commanders which had been eliminated largely during the trend toward unity of command. The increase in army political personnel, during this period, was due, in part, to the increase in the army. From 1934 to 1939, the total political personnel jumped from 15,000 to 34,000, or 126 percent. To indicate the degree to which the political organization had been bureaucratized since the early days, the total number of political workers, in 1918, was only 6,389 in an army of comparable size.

A factor which was likely to enhance the possibilities of conflict was the generally poor background and education of the political workers. It is obvious that,

with their responsibilities tremendously increased, excellent education and training were essential to the commissars. Yet, it was as late as 1940 before the entrance requirements to the military political schools were raised to 8 to 10 grades of secondary school, as compared with the prior prerequisite of 6 grades. Military training corresponded to that for a regimental noncommissioned officer. The requirements for attendance at the Military Political College were raised to the completion of secondary education and a military education equivalent to the normal



Marshal Timoshenko succeeded Voroshilov as head of the Red Army in 1940.—*Sovfoto*.

military school program. After 1940, also, the candidate for military political training must have had practical experience as a Party-political worker.

These raised requirements are certainly none too impressive for officials with as much power as the commissars. There seem to be two possible explanations for the low cultural and educational level of

the commissars. Either the educated youth were not attracted to political work in the army, or the Government preferred, during this crisis period, commissars of low educational attainment, on the theory that political loyalty was more important than a cultured, educated background.

Again, as in the Civil War period, the ideal commissar was the fighting commissar who inspired the troops to deeds of heroism. The political leaders, themselves, were high in their praise of the fighting, military qualities of the commissars. Evidently the propaganda machine was turned on full blast in order to make the commissars popular with the rank and file. There is no doubt that many were competent as military leaders, but the basic weakness of the command situation remained: duality. Indeed, with commissars competent in the military field as well as in the political, conflicts with the commanders were likely to be even more frequent and intensive, since those with little or no military knowledge would be more hesitant to intrude themselves into the sphere of military operations.

The reinvigorated commissar and collegiate system, having received its baptism of fire in the skirmishes with the Japanese at Lake Hassan in 1938, was still in the same powerful position during the Finnish War. Thus restored to the plenitude of power, the commissars were exceedingly eager to prove their worth. At any rate, there can be little doubt that they were extremely active during the Finnish campaign. Indeed, that seems to be one of the principal complaints from the military leaders: that they were far too active in affairs which normally come within the jurisdiction of any commander. In their zeal, they seemed to have exerted, in many cases, an excessive control over military decisions.

Commissar Activities During the Finnish War

It is evident, during the Finnish War,

as in the Lake Hassan incident with Japan, that the commissar performed actual leadership functions in military operations. And there is little doubt that the political officers were extremely zealous, even though, at times, they were an encumbrance to the military commander. In addition, commissars and their assistants (*politruk*) often took upon themselves the responsibility for military actions. As a whole, the political personnel still were poorly educated by 1940, and there seem to be grounds for concluding that their power in actual military operations often exceeded their ability to cope with the situation.

The Pendulum Swings Again

It is fairly evident that the Soviet high command, particularly Marshal Timoshenko, viewed the commissar system as an impediment in the Finnish campaign. The inevitable result had been a divided authority and a relative diminution of the military commander's prestige. Consequently, Timoshenko, who replaced Voroshilov as Commissar for Defense in May 1940, was given the authority to reorganize the army following the conclusion of the Finnish War. The key to the problem was the military commander: his prestige and authority had to be increased. This change was accomplished by two principal means: one negative, the other positive. In the negative sense, the co-equal rival of the commander, the commissar, was eliminated. On the positive side, several steps were taken to heighten the prestige of the officers, such as distinctive uniforms, compulsory saluting, and special privileges. There can be no question but that these separate developments were, in reality, the two sides of the same coin.

Duality of command, then, had come to be considered, by at least an influential number in authority, as a distinct hindrance to the development of the Red

Army. Unity of command was the watchword, and, in order to increase that unity, a major reorganization of the officer's place in the army was effected. For the Soviet Government to take the sweeping measures for the rehabilitation of the power and prestige of the officer corps, which took place in the latter half of 1940 and in 1941, indicates that Government's conviction of the imperative need to correct a grave deficiency in discipline.

On 9 May 1940, the Soviet Government granted to military commanders "full power and responsibility" and, on 12 August, by decree, the commissar system was abolished. The Political Administration, of course, continued to flourish, but with its activities supposedly channeled into propaganda, indoctrination, recreation, and the physical and mental well-being of the troops. With the abolition of the collegiate or council system of army control along with the commissar, the political personnel were deprived of any authority in military operations. The inevitable result was the strengthening of the position of the officer corps.

The abolition of the commissar system had come as the result, evidently, of experience gained in actual military operations. Unity of command had been established, which, to students of military affairs, seemed the only practicable method for the operation of an army.

Dual Command Restored

Consequently, the decree of 16 July 1941, which restored dual command through the commissar system, came as quite a surprise. The time of the reversion to duality was most significant: less than a month after the beginning of the Russo-German War. The decree provided for the institution of commissars and their assistants on every echelon of command: "... in all regiments, divisions, military schools, and other army establishments, and the appointment of political instructors to all army companies, bat-

teries, and battalions." Within a few days, the system was extended to the navy, and commissars were installed in all naval schools, ships, and institutions. The educational and propaganda functions of the new military commissars were de-emphasized, while the police aspect of the office came to the fore.

The position of the commissar in the Red Army was unequivocal in the explicit delineation of functions laid down in the decree of the Presidium of the Supreme Soviet. Alexander Werth, in his *The Year of Stalingrad*, describes him as "the representative of the Party and the Government in the Red Army, and, together with the officer, he bears full responsibility for the performance of military tasks, for stubbornness in battle, and for the determination to fight to the last drop of blood."

It is interesting to observe the justification of this action given by the Soviet Government. The Supreme Soviet announced that the German War had "imposed upon us fundamentally changed conditions," and that the volume of political work had increased. It was further stated that "the war has demanded that our political workers not confine their activities to propaganda but also assume responsibility for military operations at the fronts." The intention, obviously, was to make it appear that the return of the commissar was effected principally in order to aid the overburdened commander.

There can be little doubt that the reintroduction of the commissar system was, at least in part, dictated by a concern for the political stability of the regime. When due weight has been given to the morale value of the commissar as an example of the courage of the Communist elite, it only serves to emphasize the need of a morale builder in the Soviet forces. The fears of the Soviet leaders continually enter the picture. Both principal duties of the commissar—the morale factor of leadership by courageous example, and close surveil-

lance of the army, in general, and the officer corps, in particular—would seem to be a reflection of the dim view which the Party leaders took of the army's will to fight, and their loyalty to the regime itself. The fighting commissar, as an inspiration to the troops, must have been, from a military point of view, poor compensation for the frustrating and inhibiting effect which their surveillance and co-equal power had on the commanders. The statements of the Soviet press itself, on the occasion of the abolition of the collegiate system in 1940, as well as attention to a fundamental tenet of Western military science, leads one, perforce, to the conclusion that there could have been no *military* advantage in dual command. Hence, one must assume that the Kremlin sought a *political* objective: namely, control of what was, from the Kremlin's point of view, a doubtful organization by the Communist Party. It is believed that only indirectly did the collegiate system aid the operations of the Soviet armed forces, since, from the viewpoint of the Kremlin, justification was almost entirely on political grounds. Whether this drastic action was necessary, in an objective sense, in order to ensure the safety of the regime is a question of vital importance, but one which does not come within the scope of this article.

Dual Command Abolished Again

Hardly had the observers of the Soviet military scene recovered from their surprise at the reinstitution of commissars on 16 July 1941, than the system was abolished on 9 October 1942. The change was effected by a decree of the Presidium of the Supreme Soviet, which vested full authority in the army's officers. The violent fluctuation in the principle of command employed by the Red Army is a phenomenon of no little interest to students of political and military affairs.

Reasons for the Change

High up on the list of causes for the

abolition of the commissar system was the chronic conflict between the commissars and the commanding officers. The commissars, generally harder and more zealous than the officers, enforced the "iron discipline" rules with a stringency which the officers resented. The co-equal position of the commissar with the commander was, of course, the most important cause of conflict.

The need for unity of command undoubtedly was felt strongly among army personnel, and the urgency of this need, without doubt, filtered up to the policy level of the Party. In the decree of the Presidium of the Supreme Soviet, the move was justified by harking back to Civil War conditions, ignoring for the most part the tergiversations since that time, and concluding that, with the development of new cadres of faithful officers and of commissars who were capable themselves of military command, the commissars became superfluous. Indeed, the decree went so far as to admit that the continuance of the system might have become an obstacle to the development of leadership. Also, since the primary duty of the commissars had been political and military surveillance, it is reasonable to assume that, with the end of the long retreat and the possibility of Soviet victory at Stalingrad, the need of the commissars, in the eyes of the Communist Party, probably was lessened.

The decree of October 1942 provided that each unit should have, instead of a commissar, a deputy commander for political affairs, further described as the commander's "deputy in the political field." He was of officer rank, but usually of not as high a rank as the commander. Principally, he was in charge of political education and propaganda within the vast framework of the Political Administration. His countersignature was no longer necessary for the issuance of orders, and, presumably, he could no longer interfere with the officer's decisions.

Many former commissars were transferred to the officer corps and placed in command of troops. Women commissars, also, were made deputies for political affairs.

Conclusion

The disappearance of the commissar and, presumably, of dual command did not mean that the Soviet Government was no longer stressing political activity in the army. Quite the contrary was the case, and frequent claims were made that, now that the political personnel were relieved of other duties, they could concentrate on political activity.

Thus, at the turning point of the war, the Red Army presumably achieved unity of command and most certainly did achieve

a great enhancement of officer prestige. However, to believe that the Communist Party ceased to control the destinies of the army would be naive indeed: the army was still a political as well as a military institution. That the deputy for political affairs does not, at present, have any authority in purely military decisions is very probable. However, in view of the record of the past, it is also probable that, in the event of any future grave crisis in Soviet affairs, such powers again would be given to the political officers or their equivalent. This probability, and the whole nature of the Soviet system which makes such an institution as dual command possible, should be a matter of considerable concern to students of military affairs.

Today, the tyrant can uproot and liquidate whole classes of people and entire nations. The death camps of Hitler Germany or of modern Siberia demonstrate that the unrestricted power of the government can be a greater evil in our modern civilization than it ever was in ancient times.

President Harry S. Truman

In two world wars, we have shown that no power on earth could destroy our way of life when we resolutely marshalled our strength. And I am confident that if we show that same resolution in the years to come, we stand the best possible chance of accomplishing this great purpose.

General J. Lawton Collins

Control Patrols

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The views expressed in this article are the author's and are not necessarily those of the Department of the Army or the Command and General Staff College.—The Editor.

DESPITE the completeness and adequacy of our doctrine concerning patrolling, most United States Army units definitely were weak in their performance of this important combat function during World War II.

What were the causes for this weakness?

The following analysis of the causes for this deficiency omits consideration of the errors in scouting and patrolling committed by individual members of patrols. Such errors, although important and numerous, are outside the scope of this article.

Command and Staff Responsibilities

The commander and his staff have many responsibilities for patrols. Some of the faults attributed to them and which were developed during World War II were:

1. *In precombat training:*

a. Training was inadequate and unrealistic, with insufficient emphasis on night patrolling. (This applied to staffs as well as unit personnel.)

b. Patrols were not employed extensively on terrain exercises and maneuvers.

2. *In combat operations:*

a. Adequate time was not allowed by the headquarters issuing the request for

the patrol for a subordinate echelon to prepare for its execution.

b. The missions assigned were too general.

c. The briefings were hurried and inadequate.

d. The co-ordination of the patrol effort was poor. Consequently, combat patrols (G3), reconnaissance patrols (G2), and patrols from adjacent units often duplicated efforts, and occasionally fought each other.

e. Patrol personnel were not selected carefully.

f. If a soldier demonstrated ability in patrolling, he was sent on consecutive missions without relief or rotation.

g. Fire support (artillery, mortars, and air) was not used to the maximum advantage.

h. Specialists (engineers and members of intelligence and reconnaissance platoons or battalion intelligence sections) were not employed to assist infantry patrols.

i. Results of patrol action were not exploited by a proper interrogation of the patrol leader and by a thorough analysis of the patrol report.

j. Adequate recognition was not given to successful patrols.

3. *Both in training and in combat, it was not realized that patrolling is an essential part of the integrated effort to fill gaps in the intelligence picture. Patrol planning was sketchy and was not in-*

tegrated with the planning for the rest of the collection effort.

After action reports of many units illustrated the deficiencies noted above. For example, the G2, XIX Corps (ETO), on 13 July 1944, made the following statements regarding his observations of the operation of patrols in that corps:

"Patrols that were sent out after dark generally stumbled around until daylight and then stumbled back without accomplishing the desired results. While the enemy fired and used flares, this fire was not always aimed at the patrols; nor were the flares sent up because the enemy knew the patrols were in the vicinity. This statement applies to all types of patrols, including both infantry and cavalry. In the first days of the operations, there was a tendency to make the patrols too large. In one instance, a patrol of three squads was sent out to obtain information and it was too big for secrecy and yet too small for a raid. What could it do? It suffered many casualties and obtained very little information. This error now has been practically eliminated, but it is believed it will occur often with green troops and green commanders in the initial phase of action. Most patrols now being sent out are commanded by officers or very experienced noncommissioned officers. When possible, patrol leaders should be given an opportunity to make as much of a daylight reconnaissance of their route as possible. In one instance, a patrol

sufficient detailed information and instructions regarding the mission to be accomplished. Now, however, patrols generally are well briefed, properly supplied with maps, and, in many cases, use photographs with routes and areas marked on them in colored pencil."

While it is true that serious errors were committed when engaging in patrolling activities, many units achieved outstanding success in patrol actions. Examples of such successes seem to have occurred more frequently in the Pacific theater, where the jungle terrain and the relatively thinly held Japanese lines often facilitated patrol action.

The following account of the extensive use of patrols for combat intelligence by the 77th Infantry Division on Guam is reprinted from the January 1945 issue of the War Department "Intelligence Bulletin." It parallels closely the story of the 1st Cavalry Division in the Admiralty Islands, and serves to drive home the necessity for aggressive patrolling.

Patrolling on Guam

Narrative

Early one morning, long after organized resistance on Guam had ceased—even after Tokyo had announced the loss of the island—an emaciated, long-haired little Japanese stepped out of the jungle and surrendered at reveille to a group of United States soldiers. When interrogated by intelligence officers, he repeatedly announced his amazement at the great speed and power with which American troops had captured Guam. He knew that United States patrols

Efficient, aggressive patrolling, a requisite for success in battle, provides the commander with security and gives him essential intelligence. A haphazard effort in patrolling invites surprise and courts disaster

leader was notified at 2100 that he would lead a patrol a few hours later when the fact was known during daylight hours that this patrol was to be dispatched. This error now has been corrected. Initially in the campaign, patrols were not given

had killed three of his comrades in the hills when he escaped; but what he did not know was that those patrols, and many more like them, had made possible the very fact which so astonished him—the rapid advance of the American forces.

Aggressive patrols of all types were employed continuously by the United States forces throughout

the campaign. The success of those patrols not only made possible the speed and directness of the 77th Division's advance, but also gave confidence to the men, and convinced all troops of the importance of scouting and patrolling. Some of the methods used, together with the results, are disclosed here.

Development of Patrolling

Directly after the landing on Guam, patrols, at first, were sent only short distances, so as not to interfere with the great volume of artillery, air, and naval gunfire support, and so as to accustom new troops gradually to operations against the enemy. In some organizations, volunteers were used; in other organizations, the best qualified men were chosen arbitrarily. In any case, those first men proved to the rest that it could be done, and, on

fully planned, but the precise routes were left to the discretion of patrol leaders. A schedule of hours for reporting and a simple "number" code for geographical locations were prearranged with each patrol leader. Patrol leaders were free to send messages at any time, but were required to make reports every 3 hours during a prescribed 10-minute period. Every night, patrols moved after dark to positions which could be defended easily, and remained there until morning.

For days, these patrols worked their way along the sword-grass slopes, dodging occasional Japanese patrols, sleeping in caves, maintaining a lookout for activity along the east and south coasts of the island, making contact with small Japanese forces, and encountering friendly Chamorroes. The patrols obtained vital information, which, when put to-

PATROL ORDER

Patrol No. _____

(Date) _____

Unit: _____

1. Mission:
2. Size of patrol:
3. Time out:
4. Expected time of return:
5. Route: (On attached map or overlay)
6. Remarks:

(Authentication) _____

FIGURE 1.

their return from patrol, became the objects of great admiration. Others soon began clamoring for the chance to do the same work, until finally all men got an opportunity to go on at least one patrol. The success of these missions buoyed the men's confidence in their own ability, and patrolling soon became a regular duty. Regiments then were ordered to patrol continuously to distances of approximately 2,000 yards. Longer missions were assigned to the reconnaissance troop, and, as early as D plus 5, its patrols started for objectives on the east and south coast of the island, a distance of some 5 to 7 miles.

Reconnaissance Patrolling

Long-range reconnaissance was performed by small patrols of the reconnaissance troop. They consisted of not more than four or five men. Each patrol carried an SCR 300 radio for communications and enough rations for 3 days. It is believed that small, lightly equipped patrols of this type would have the best chance of making successful penetrations deep into the area held by the enemy. Between 26 July and 30 July, seven such patrols traveled routes totaling more than 80 miles, and spent 56 man-days in Japanese-held Guam, without suffering a single casualty.

Their general routes and objectives were care-

fully planned, but the precise routes were left to the discretion of patrol leaders. A schedule of hours for reporting and a simple "number" code for geographical locations were prearranged with each patrol leader. Patrol leaders were free to send messages at any time, but were required to make reports every 3 hours during a prescribed 10-minute period. Every night, patrols moved after dark to positions which could be defended easily, and remained there until morning.

As a result, the division was able to shift its strength to the left, take Mountain Tonjo, and, on 31 July, to drive straight across to the east coast of the island in record time. Moreover, it was possible to maintain a hot pursuit of the withdrawing Japanese without worrying too much about the vulnerability of an exposed flank and rear.

Combat Patrolling

While the division still was consolidating its beachhead, combat patrols from infantry regiments constantly combed the areas in front of their positions, harassing the Japanese and cleaning them out of caves, huts, and other places of hiding which they occupied during the day. These patrols, which ranged in size from reinforced squads to reinforced companies, kept the Japanese disorganized; destroyed their small caches of food, supplies, and ammunition; and tended to break up enemy attempts to reorganize for counterattacks.

After organized resistance had ended, there still remained the job of hunting down and destroying isolated groups of Japanese troops which were

continuing to operate in the jungle, and which were hiding out in the hills and along the coastal cliffs of the north end of the island. This task was accomplished by strong combat patrols, which operated in the area north of a straggler line estab-

was required throughout the entire rear of the division. The dense jungle growth in the northern half of Guam confined movement, for the most part, to roads and trails. As a result, some groups of Japanese were bypassed during the advance,

PATROL PLAN

Patrol Order No. _____

(Date) _____

Unit: _____

1. Patrol leader:
2. Second in command:
3. Mission:
4. Alternate mission:
5. Size of patrol:
6. Equipment:
7. Time out:
8. Expected time of return:
9. Time order received by patrol leader: (Should be 24-36 hours in advance of time out.)
10. Time of first patrol briefing: (Should be 24 hours in advance of time out.)
11. Time of final briefing:
12. Route: (By overlay or sketch)
13. Alternate route:
14. Formation to be employed:
15. Communications plan: (To include passwords or countersigns)
16. Are there any patrols to front, rear, or adjacent? Yes----- No-----
(If yes, what is plan of co-ordination?)
17. Control plan within patrol: (Signals)
18. Disposition of attached personnel: (If any)
 - a. Artillery:
 - b. Engineers:
 - c. Medical:
 - d. War dogs:
19. Employment of supporting weapons:
 - a. Machine guns:
 - b. Artillery:
 - c. Mortars:
 - d. Air:
20. Resupply: (If any)
21. Action of patrol upon contact with enemy:
22. Action upon discovery of enemy mines (AP or AT) or "booby traps":
23. Plan of defense if patrol is ambushed:
24. Assembly or rally point:
25. Support to patrol if ambushed or surrounded by enemy:

Approved _____

(Patrol Leader)

Approved _____

(Date & time)

(Date & time)

FIGURE 2.

lished across the center of the island in the division sector.

Security Patrolling

In addition to combat patrolling by front-line infantry troops, considerable security patrolling

while others infiltrated through United States forward positions. Even after the backbone of resistance on the island had been broken, isolated groups of well-armed Japanese were found everywhere, and all United States troops—regardless of whether they were artillerymen, ordnance mechanics, clerks, medics, or truck drivers—found it neces-

sary to secure their bivouacs and positions by patrolling constantly around them. Those were called "mop-up" or "termite" patrols.

Snipers often were encountered along main supply routes, or in and around areas which had been cleared and passed several days before. In one instance, a patrol found a strongly armed group of Japanese, well concealed and hidden in the jungle, about 400 yards from the division command post. This group was approximately of company strength. In another instance, clerks of the adjutant general's section, patrolling around the division rear echelon, found a group of armed Japanese in a wooded ravine running through their area.

situated; and the guides' familiarity with the terrain saved the patrols countless steps and a great deal of time, especially in the jungle.

The regiment which was to spearhead the division attack across the island sent a noncommissioned officer along with one of the reconnaissance troop's patrols which crossed the island along the same route the division planned to follow. This soldier later acted as a guide for the regiment when the advance started.

Planning and Co-ordinating Patrols

To prevent any overlapping of patrols, and to ensure complete coverage of the entire division front and flanks, sectors of responsibility and patrol

PATROL REPORT

Patrol No. _____

(Date & time)

Unit:

Patrol leader:

1. Mission:
2. Size of patrol:
3. Route: (Planned)
4. Route: (Actual route taken)
5. Time of departure:
6. Time of return:
7. Results of patrol: (Number of enemy observed, prepared positions, destruction wrought, etc.)
8. Condition of patrol:

(Patrol Leader)

(Unit Commander)
(Authentication)

FIGURE 3.

Note: Figures 1, 2, and 3 are modifications of the order, plan, and report forms used by the 38th Cavalry Reconnaissance Squadron (Mecz) in the European Theater of Operations.

It was found expedient to patrol around bivouacs and installations at least twice a day—just after daybreak and before dark. Tanks often were used to reinforce these patrols. At the division command post, even the band was pressed into this service.

Patrol Reinforcements

Both reconnaissance and combat patrols often were accompanied by engineer parties, artillery forward observers, and native guides whose reliability had been verified by intelligence. Accompanying engineers were able to reconnoiter roads and bridges well ahead of front-line troops. The engineers who went along with one of the reconnaissance troop's long-distance patrols on 29 July were able to select a route along which the division later built a supply road. Artillery observers adjusted fire upon targets encountered by the patrols that they accompanied. Most of the native guides knew approximately where the Japanese were

routes were assigned and co-ordinated by the division G2 and the regimental S2s.

The problem of co-ordinating long-distance patrols with artillery, air, and naval gunfire support could not be overlooked. To safeguard the patrols, it was necessary to have them make periodic radio reports of their exact positions, so that each fire support mission called for by the infantry could be checked with the location of the patrol before it was fired. On the other hand, patrols could not be allowed to interfere with defensive fires, especially with night fires in support of front-line troops. However, in no instance was it necessary to refuse a fire support request on account of patrols, and, in one instance, a patrol itself was able to direct artillery fire, by radio, on a small concentration of Japanese troops.

Routes of the combat patrols, which cleaned up the northern part of the division sector after organized resistance had ceased, were changed daily because it was found that the Japanese would



Alertness and ruggedness at all echelons, operating under forceful direction, is the key to efficient patrolling—a requisite for success in battle. Above, four members of a reconnaissance patrol check a map before starting out on a mission on Okinawa. Below, a patrol in hedgerow country near Mortain, France.—Department of Defense photos.



clear out of an area as soon as one of the patrols had worked it over. Patrolling to eliminate the armed remnants of the enemy force required careful planning, as well as patience and hard work.

Comments

It is interesting to note the development of experience and confidence on the part of the men participating in the patrolling action. Constant probing with reconnaissance and combat patrols tended to throw the Japanese off balance and keep them moving. This fact unquestionably contributed to the success of the campaign and demonstrated conclusively the value of patrol activity.

The employment of the reconnaissance troop tied in neatly with its intended mission and exploited its capabilities to the maximum. The mission of the reconnaissance troop remains the same whether it is mounted or dismounted.

Value of Co-ordinated Effort

From these two accounts, the value of a co-ordinated patrol effort by a division should be obvious. How can this be ensured?

British units, in some static situations in Italy, designated a brigade patrol officer who not only co-ordinated all patrols in the sector or zone, but, in many instances, assisted in the briefings of all patrols prior to their departure from the front lines.

Since so many patrols are sent out with the mission of gaining specific information and as all patrols have that capability, it is logical that the division G2 should be the co-ordinating officer for all patrols. This does not imply a relief of the G3's responsibility for the initiation of combat patrols. Under the proposed system, the G2 retains not only the responsibility for reconnaissance patrols but also the over-all supervision of all patrolling and necessarily works very closely with the G3.

The system outlined below is suggested:

1. The division G2;

a. Maintains the records of all patrols executed.

b. Receives the requests from other staff sections for patrols. (Checks requests to prevent duplication of reconnaissance effort.)

c. Initiates the orders for all patrols requested by staff sections.

d. Receives the notices from units of planned patrol operations.

e. Co-ordinates the patrol routes between regiments and with adjacent divisions to prevent any possibility of engagements between friendly patrols.

f. Makes available the services of photo interpreter personnel to assist in the briefings of patrols.

g. Furnishes the personnel to brief patrols dispatched on missions requested by staff sections.

h. Exercises staff supervision of the necessary co-ordination of patrol activities with the fire support co-ordination center (artillery, tactical air support, and naval gunfire support).

i. Disseminates the results of patrol activities to all interested agencies.

2. Regimental S2s:

(Same as the division within their appropriate scope.)

3. Infantry battalions and the reconnaissance company:

(These units furnish patrol personnel.)

a. Use the series of forms (Figures 1, 2, and 3) to order or initiate patrols, sending a copy to the division patrol center (G2 section).

4. The following points should be covered in the unit standing operating procedure:

a. Once the patrol mission has been determined, the patrol leader is called in and oriented reference to the patrol order. This orientation may be conducted by the regimental or battalion S2, in case of unit initiation, or by a representative from the G2 section in the case of initiation by a division staff member. The

time of the orientation, except in emergencies, should be a minimum of 24 hours prior to the time of execution.

b. At the first meeting, the best route is recommended by the orienting officer. A map and photograph of the area are used to check the route, to fix the landmarks, and to indicate the spots to avoid because of mines or other known enemy installations.

c. After the first meeting, the patrol leader is given an opportunity to assemble his patrol for a briefing. The division photo interpreter personnel should be made available to the patrol leader, at this briefing, to answer any questions concerning known enemy installations. If possible, the patrol leader, and such personnel as he may designate, should have access to an observation point to look over the terrain and identify certain features on the terrain.

d. Next, the patrol leader is given ample time to formulate his complete plan for the execution of the patrol, and then this plan should be rechecked by the regimental or battalion S2, or by the representative from the division G2.

e. When possible, rehearsals should be conducted for all patrols.

f. Provisions for rest and hot meals for patrol members *both before and after* patrols should be habitual.

Summary

It is realized that certain variations in any system will occur because of the personalities of commanders and differences in the types of terrain, combat conditions, and potential enemies, but the placing of staff responsibility for all patrols in one central section brings this activity of the division into a better focus for the commander.

Commanders must give their personal attention to patrolling; it is not enough to delegate this important action to G2 supervision and a standing operating procedure. The personal impetus of commanders ensures that patrolling is aggressive, thorough, and detailed. The wise commander recognizes that a haphazard patrolling effort invites surprise and courts disaster; whereas, a well-conducted effort provides security and gives him essential intelligence. Alertness and ruggedness at all echelons, operating under forceful direction, is the key to efficient patrolling—a requisite for success in battle.

We must rely heavily on science and technology. The most effective use must be made of our supply of individuals having the special skills required to develop and produce the necessary equipment and to use and maintain it in the armed forces. Malutilization of such individuals represents a direct and unnecessary reduction of our defense potential.

President Harry S. Truman

There can be no doubt that our atomic supremacy has been of great persuasive value in dissuading potential aggressors from ordering their military forces to move. Yet it should also become increasingly clear that the deterrent value of this supremacy will depreciate as potential enemies increase their stock pile of atomic weapons.

General J. Lawton Collins

Personnel Management

A Function of Command

Lieutenant Colonel Grant W. Mason, *Artillery*
Instructor, Command and General Staff College

WHAT one factor constitutes the greatest limitation to America's military might? The answer is *manpower*. A minimum of 19 years is required to produce a soldier equipped with only the bare essentials of basic military training. Obviously, it requires much less time to produce the tanks, guns, planes, and the other matériel necessary to win wars.

"America's critical shortage today is available manpower" appears constantly in the headlines. Military men are familiar with the manpower shortages that existed at the close of the last war, and with the fact that today our national security demands that we make efficient and timely use of the manpower allotted us. We devote a great deal of time and effort to conserve material and equipment and rightly so. It is vital that we also consider what we can do to *conserve* our most critical commodity—our manpower.

We are well aware of the great losses of manpower in combat, but we are not sufficiently cognizant of the equally great losses in manpower resulting from faulty personnel procedures in all echelons of command. We are prone to overlook the fact that wars can be muddled or even lost through faulty personnel procedures just as they can be lost through the faulty application of tactical principles.

This article is designed to emphasize that *command supervision* and *guidance* in personnel matters are indispensable, and to illustrate some of the means and

methods the commander may employ to effect the best use of available manpower.

Guides for Commanders And Personnel Officers

The four major points covered in some detail in this article might be called *guides for commanders and personnel officers*.

1. *Personnel management is a function of command*. Simple? Yes. True? Also yes—although this principle often is violated.

To illustrate this concept—that personnel management is a function of command—several examples are included, whereby commanders, through intervention and the exercise of command, resolved a personnel situation.

In analyzing these examples, it is interesting to note how the failure of the commander to interest himself in the problem may well have resulted in some degree of failure. In short, whether you are a staff officer or a commander, you must take a personal interest in the individual members of your unit.

2. *Personnel work deals with men as individuals. Any plan to handle them otherwise will fail, regardless of its technical perfection*. Many people, drawing deductions from limited, personal experience or from the experiences of others, may question the validity of this statement. For example, during a class at the Command and General Staff College, a student objected to a solution in which a division commander took pains to inter-

view a junior officer. This student said, "A commanding general would not have time for this trivial matter," and added that he himself knew that his commanders during the war did not do it. The student's experience indicates a command failure rather than disproof of the statement.

People have individual differences. They have individual likes, dislikes, desires, and problems. These basic needs and desires must be considered if the maximum effectiveness of the individual is to be achieved. True, we do teach certain rules, certain standing operating procedures, and, when necessary, we do not consider individual desires over the good of the service. However, we do try to reconcile the individual's desires and personal problems with the needs of the service, and, where possible, make necessary allowances. Some problems illustrating this point appear in this article.

3. *A nation's manpower is not inexhaustible. All available means of conserving manpower must be utilized fully. This is so self-evident as to be axiomatic.*

4. *No personnel system is good if administered improperly. No personnel situation, particularly in the combat zone, is static. A good personnel system employs every means to save manpower and to obtain the maximum efficiency from existing manpower. We must have a personnel system that is staffed properly, flexible, and quickly adaptive to changing conditions. It must make the best use of the*

Selection of Leaders

Let us now consider that aspect of personnel management which governs the conduct of manpower in combat units. This is close to all of us—the selection of leaders.

Here are a few considerations:

1. The proper utilization of men in a unit saves manpower, promotes morale, and increases efficiency. We should promote from within units to fill vacancies.

2. A fruitful source of junior officers in combat is battlefield appointments. Demonstrated leadership on the field of battle is the best possible test for aspiring leaders.

3. When we cannot fill vacancies from our own resources, no effort should be spared to obtain the best man for the job. Each man must be considered individually from all angles.

Specific Examples

Now, let us look at a few specific problems. To provide realism, a general situation of a field army in combat has been developed and will be used as the background for the problems presented in this article.

General Situation

1. The United States Thirty-first Army is one of three armies assigned to the 17th Army Group.

2. After severe fighting extending from the beaches of Western France, the Thirty-first Army has halted at the Rhine River for resupply and reorganization.

As the Nation's manpower is not inexhaustible, all available means for conserving this commodity must be taken. The efficient, intelligent use of personnel management is one method of dealing with this problem

materials at hand. No organization or system can function without proper guidance and support from above; that is, command supervision. This point reinforces the concept that personnel management must be a function of command.

3. The Thirty-first Army is planning to renew the offensive in 10 days, with the mission of forcing a crossing of the Rhine River and continuing the advance to the east. During the initial phase of the operation, the main effort is to be made by

the XLII Corps. The 160th Infantry Division will make the corps' main effort.

Special Situation

1. You are the G1, 160th Infantry Division. During the last engagement of the 160th Infantry Division, the following field officer casualties occurred:

a. 478th Infantry Regiment: one battalion commander killed in action.

b. 479th Infantry Regiment: one battalion commander evacuated because of severe combat exhaustion.

c. 639th Field Artillery Battalion: the battalion commander wounded and evacuated. The division surgeon estimates that the battalion commander should be fit for return to duty in about 30 days.

2. None of the vacancies has been filled.

3. You have the following information concerning the vacancies created by the casualties mentioned above.

a. 478th Infantry Regiment: (1) The regimental commander has told you that both Major Smith and Major Jones, of his regiment, are fully qualified for promotion. A recommendation for the promotion of Major Smith has been submitted.

(2) The recommendation for the promotion of Major Smith has been forwarded to you by the adjutant general of the division. It is administratively correct and meets all requirements.

b. 479th Infantry Regiment: The regimental commander states that he has no officer in his regiment that he is prepared to recommend for promotion. He has submitted a requisition for a battalion commander. The adjutant general reports that he has received the requisition for a battalion commander.

c. 639th Field Artillery Battalion: The commanding general of the division artillery has informed you that, while he has at least two majors fully qualified for promotion, he prefers to hold the battalion commander's vacancy open pending the return to duty of the wounded officer. He considers this officer to be his best battal-

ion commander. No requisition for a battalion commander has been submitted and no recommendation for promotion of a major has been received by division.

First Requirement

1. What action do you take on the recommendation for promotion of Major Smith?

2. What action do you take on the requisition for a battalion commander by the 479th Infantry Regiment?

3. What action do you take regarding the situation in the 639th Field Artillery Battalion?

Special Situation Continued

1. The commander of the 160th Engineer Combat Battalion has been wounded seriously. The division surgeon says that the battalion commander probably will be evacuated to the Zone of Interior. This battalion badly needs a commander.

2. The executive officer of the 160th Engineer Combat Battalion has held that position for only 2 months and is not yet considered fully qualified for the command of a battalion.

3. You have heard that there are now three lieutenant colonels of engineers available for assignment and that you may request the one you want by name. Their qualifications are listed below.

Lieutenant Colonel "A"

a. Graduate, Engineer School (Advance Course).

b. Some 7 years' service, 4 years of which have been with troops.

c. Last 6 months in command of an engineer battalion in the communications zone.

d. Age 32.

e. No divisional experience.

f. Efficiency rating "Superior."

Lieutenant Colonel "B"

a. Graduate, Command and General Staff College.

b. More than 9 years' service, 6 months of which have been with troops.

c. Previous assignment, during the war, has been on construction work except the last 3 months which were spent as a member of the theater planning staff.

d. Age 34.

e. No divisional experience.

f. Efficiency rating "Superior."

Lieutenant Colonel "C"

a. Graduate, Engineer School (Advance Course).

b. More than 6 years' service, 3 years of which have been with troops.

c. During the past year has commanded an engineer combat battalion assigned as corps troops.

d. Age 33.

e. No divisional experience.

f. Efficiency rating "Superior."

Second Requirement

What action do you take on the above matter?

Solution to Requirements

First Requirement.—1. You suggest that the division commander approve Major Smith's recommendation for promotion. Your reason for this is that the best source of replacements for leaders, from the standpoint of efficiency and morale, is from within the unit.

2. You recommend that the requisition be cancelled and that Major Jones be transferred to fill the vacancy. Your recommendation is based on the concept that when qualified replacements are not available within a unit, every effort should be made to secure them from within the next higher echelon, in this case the division, before requisitioning. This procedure, like that in paragraph 1 above, provides incentive, promotes efficiency, and improves morale. The policy of promotion within the unit requires a judicious interpretation of the term "the unit" so that able men are

not frozen in subordinate jobs because of the lack of a vacancy in a small unit.

3. You acquaint the chief of staff and commanding general with the situation, and recommend that no further action be taken on the matter at this time. In this case, no other action or recommendation is necessary. Under the circumstances, the artillery commander is perfectly within his rights to adopt such a course of action.

Second Requirement.—You recommend the assignment of Lieutenant Colonel "C" as the commander, 160th Engineer Combat Battalion.

The abbreviated histories of the three officers indicate that they are above-average men. They are all young, have about the same length of service, and comparable high efficiency ratings. From the point of view of schooling, Lieutenant Colonel "B" has had the best military education, but he has had very little service with troops. However, both "A" and "C" have had considerable troop duty, command experience (with "C" having the most), and sufficient military schooling for the job. The decision here, with a battalion needing a commander at once, must rest on who will do the best job in the position now. An analysis of all the factors indicate that "C" is the man for the position, with "A" as second choice.

Battlefield Promotions

Special Situation Continued

1. You are the G1, 160th Infantry Division.

2. Below are extracts of the recommendations for battlefield appointments of two enlisted men to the grade of second lieutenant which have been forwarded by the adjutant general for the division commander's signature. The adjutant general has checked them over and his memorandum of transmittal notes that they are administratively in order and that the men concerned meet the qualifications as prescribed by the theater.

3. *First letter of recommendation.*

Corporal Samuel X. Green.

AGCT 110.

8 months of service.

3 years of college.

No record of trials by court martial or conviction by civil court.

Civilian occupation: student.

Age 23.

Has been awarded a Bronze Star Medal.

Act, or acts, which showed his fitness for battlefield appointment:

"While the platoon of which Green was a member was advancing in the vicinity of Epinal, the platoon leader became a casualty. Green took over at once, but a few minutes later the entire advance was stopped by heavy small-arms and machine-gun fire. After about 20 minutes, Green spotted a small draw leading into the enemy position. Attracting the attention of the nearest men, he, with six others, proceeded up this draw, forced the enemy from his position, and allowed the platoon to resume its advance."

4. *Second letter of recommendation.*

Staff Sergeant Francis Q. O'Brien.

AGCT 112.

17 months' service.

College graduate.

No record of trials by court martial or conviction by civil court.

Civilian occupation: journalist.

Age 27.

Has been awarded the Silver Star.

Act, or acts, which demonstrated his fitness for battlefield appointment:

"While serving as a squad leader during the attack on Toul, the company in which O'Brien was serving was counter-attacked by a small force of the enemy supported by two tanks. Sergeant O'Brien's squad was forced to withdraw about 300 yards, losing two men to tank fire. O'Brien, taking a submachine gun and an antitank rocket projector, proceeded along the cover of a gully until

within 30 yards of the enemy. He destroyed one tank with the only rocket he had and forced the other to withdraw using his submachine gun and hand grenades. His squad remained in its position until relieved that night when it rejoined the balance of the company which had continued the advance."

Third Requirement

What are your recommendations to the chief of staff? Give reasons.

Solution to the Third Requirement

You recommend that the division commander sign the recommendation for the battlefield appointment of Corporal Green. He actually has demonstrated leadership on the battlefield. Further, you suggest that Sergeant O'Brien's recommendation not be approved at this time. He has demonstrated gallantry in action but has not yet demonstrated the required degree of leadership. It should be noted that Green's action resulted in a positive achievement by his unit. O'Brien's did not!

Summary

A series of problems, typical of those which arise constantly in a division in combat, have been presented. Note the factors which helped determine their solution:

1. Vacancies were filled, where possible, from within units.

2. Battlefield appointments of enlisted men were made on the basis of demonstrated leadership. Care must be taken to differentiate between *leadership* and *valor*.

3. When the methods mentioned above were unproductive, qualified personnel were secured. The basis of procurement was the *best man for the particular job* and not simply the best man.

This careful utilization and placement of men will effect a reduction in manpower requirements and prevent the unnecessary wastage of personnel already present in a command.

Now let us look at problems involving other personnel procedures.

Transfers

Special Situation Continued

1. You are the Commanding General, 160th Infantry Division. The following letter has just been received in your headquarters:

"It is requested that I be transferred from Company 'I,' 478th Infantry Regiment, either to the 160th Quartermaster Company, where I understand a vacancy exists, or to a service unit in the communications zone.

"I have been a platoon leader in Company 'I' for the past 3 weeks. I do not feel qualified to command a rifle platoon in action, but I feel that my civilian background of manager of a wholesale grocery concern would make me of value to a quartermaster unit."

2. This letter bore the following indorsement by the regimental commander:

"Recommend transfer to the 160th Quartermaster Company. If this officer feels this way, I do not desire his services.

"He has served as a reasonably efficient platoon leader considering his limited experience and, prior to the submission of this letter, I should have rated him as possessing potential capabilities as a company commander."

3. The letter was transmitted to the commanding general, through the chief of staff, by the G1 with the following memorandum:

"It is recommended that the regimental commander's request be approved. Indorsement to that effect is enclosed for the general's signature.

"The officer's record indicates that he was inducted, given basic training, and then sent directly to an officer candidate school, from where he was graduated, commissioned a second lieutenant, and sent overseas. This is his first assignment. The officer is 26 years of age. There

is no record of reclassification or disciplinary action.

"There are no grounds to warrant action of a disciplinary nature, nor does reclassification seem indicated. However, if the lieutenant does not want to fight, we do not want him. The vacancy in the quartermaster company will be filled as soon as replacements, based on our last requisition, are received, probably in about 3 days."

Fourth Requirement

Which of the following possible actions do you take in the case of the lieutenant mentioned above?

1. Transfer the officer to the quartermaster company and cancel that portion of the last requisition.

2. Disapprove the request.

3. Sign the indorsement as suggested by your G1.

4. Direct your inspector general to investigate with a view to taking disciplinary action.

5. Interview the lieutenant, and, if he confirms what he said in the letter, direct that reclassification proceedings be initiated at once.

6. Interview the officer, tell him that he can command a platoon in action, that he must measure up to his responsibilities as an officer, and retain him as a combat officer.

7. Transfer the officer to another regiment.

8. Any combination of the above actions. Specify which.

Solution

You take action as indicated in number 8; that is, a combination of courses of action 2 and 6. By so doing, you disapprove the request, interview the officer to stress the importance of his duties and responsibilities, and retain him.

The action thus taken will serve to save

for the division the services of an officer who has demonstrated his ability to lead in combat. Probably this will be sufficient to cause him to develop his full potential; to cause him to develop that confidence which appears to be lacking.

The desirability of transferring this officer to another regiment or, preferably, to another division should be considered, since his request to join a service unit may result in prejudice against him within his own unit. While transfers are made for the benefit of the service rather than for benefit of the individual, the ideal for which we must strive is to make the good of the individual coincide with the best interests of the service.

Summary

These are only a few examples of the proper use of some personnel procedures to conserve manpower. These last requirements have illustrated the following:

1. When transferring individuals, or making the necessary personnel readjustments to meet a changing situation, we must consider the possible effects of such actions on the units concerned.

2. Where policy has been established—as the Department of Army reclassification policy—each case should be handled under such policy unless positive reasons to the contrary exist. *Reclassification is not a substitute for disciplinary action.* Using it as such will unduly stigmatize personnel who should be reclassified, as well as allow those deserving of disciplinary action to escape their just penalty.

3. Personnel cases should be decided on their merit. The case of the platoon leader who requested transfer illustrates these points:

- a. Anger, or other emotion, may lead to an incorrect decision.

- b. Command intervention can result in the saving of a good officer for the unit.

Conclusions

Personnel management is a function of command. The commander must be prepared to intervene in personnel matters, as necessary, to ensure the proper utilization of his men. A good commander is not, and cannot be, too busy to interview his men personally when the situation demands. Proper attention to personnel problems will save manpower. In short, command assistance in the solution of personal difficulties will save men.

Personnel work deals with men as individuals. Any plan to handle them otherwise will fail, regardless of its technical perfection.

Policy must not be followed blindly, and every decision involving men must be considered on its merits. This does not imply that the needs of the service are subordinate to the desires of the individual; it does mean that arbitrary actions should be avoided.

Reclassification is not a substitute for disciplinary action. Transfers are made for the benefit of the service. Documents should be supplemented by interviews where doubt exists as to the true facts in the case.

The Nation's manpower is not inexhaustible, and so all available means for conserving manpower must be fully employed. Proper command consideration of the individual needs of members of the command will result in avoiding unnecessary wastage of manpower. Efficient employment of the men already present in a command will reduce the demands on the manpower pool.

No personnel system is good if administered improperly. No personnel situation, particularly in the combat zone, is static. A good personnel system employs all means not only to save manpower but also to obtain the maximum efficiency from existing manpower. Personnel management *must* be a function of command.

MILITARY NOTES

AROUND THE WORLD



UNITED STATES

Seagoing Dredge

A new type dredge which will be capable of being towed on the open sea is under construction for the Navy. Standard dredge hulls are too light for the open sea, and must be loaded aboard floating dry-docks for transport.

In the new dredge, the hull and superstructure will be strengthened for seagoing travel, and its rugged design will accommodate handling of a large range of materials—sand, heavy gravel, coral, stone, and blasted solids.—*MSTS Magazine*.

Cooling Spray for Transformers

When used as a cooling spray, the relatively new chemicals known as fluorocarbons greatly increase the efficiency of electrical transformers.

These chemicals permit the delivery of 3.5 times as much power as is produced by conventional oil-cooled transformers. This comes from the ability of the fluorocarbons to dissipate by vaporization 10 times as much of the heat created in the transformer.

This new cooling system probably will find its first applications in the giant transformers which reduce the extremely high voltage used in cross-country power lines to lower voltages for local distribution.—*Science Digest*.

Radiation Gauge

The University of Pennsylvania has announced the development of what is termed a successor to the Geiger counter. The new instrument, called the scintillation counter, is said to be nearly 20 times more sensitive than the Geiger counter in the detection of many radioactive substances used in medical research.

The announcement said the advantage of the new instrument was that it permitted doctors to use much smaller, and therefore safer, amounts of radioactive material in diagnostic tests. It also increases greatly the use of these valuable substances in the diagnosis of disease.—News release.

Warning Device

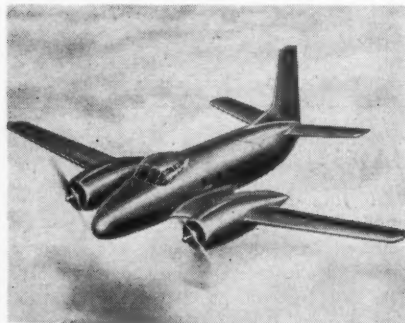
There will be less danger of accidents involving city busses with a new electrical device which gives warning of the loss of oil in their hydraulic systems and consequent brake failure and loss of steering power.

In the new system, a sensory cartridge containing a thermistor is placed in the oil reservoir and connected with a battery and alarm lamp or buzzer. The thermistor is a device in which the electrical conductivity is radically influenced by temperatures.—*Science News Letter*.

Advanced Trainer-Transport

The first Air Force-approved illustration of the new Beechcraft-designed T-36 advanced trainer-transport was released recently for publication.

As a trainer, the T-36 is designed to accommodate a crew of four: three students



Artist's drawing of the T-36.

and an instructor. As a transport, it will accommodate a crew of 2 and 12 passengers.

It will be powered by two R-2800 engines, have a speed of more than 300 miles an hour, and a range of more than 650 miles. It has a span of 70 feet, a length of 52 feet 2 inches, and a height of 21 feet 5 inches. All other information pertaining to the plane is classified.—News release.

Training for Europeans

The Mutual Security Agency has started a program to bring hundreds of skilled and semiskilled working men from 17 Marshall Plan countries to the United States for a year's training.

The men, 20 to 33 years old, will work in American industry, increasing their technical skills and gaining the American concept of industrial productivity and labor relations.—*Information Bulletin*: (Office of the US High Commissioner for Germany).

Underwater Spark Plug

A new type spark plug has been designed for underwater operation in amphibious tanks, trucks, and jeeps, and is currently in production.

The spark plug is assembled with a special connector which makes it an integral part of a completely waterproof ignition system. Manufacturers are using a similar principle in designing spark plugs for jet and other high-altitude military aircraft.—*Army Times*.

Jet Engines for Light Planes

A United States aircraft engine firm is working on a series of new pure jet and turboprop engines in the power and weight classes which will make them adaptable to both civilian and military light planes.

The new engines promise the same revolution in the performance of the smaller planes that the larger jet and turboprop engines have realized in military fighters and bombers.—*Science Digest*.

Underwater Television

Underwater television cameras that scan the lower depths of the ocean will be used by the Navy to aid divers, and to coordinate underwater activities from ship-board levels. Television not only will be invaluable to divers in helping to reduce the dangers and risks of their occupation, but it also will allow personnel at water level to observe what the diver is doing below.

The new underwater television cameras enable viewers to see under conditions where diver operation is not possible. A broad view of the entire area in which work is being done is provided by a wide angle lens on the camera. When desired, a close-up of specific detail can be provided by simply closing a switch on ship-board. This changes the camera lens from wide angle to telephoto.—*Armed Force*.

Lightweight Gyro Compass

A lightweight gyro compass which will withstand rough treatment without functioning failure or inaccuracy has been developed for the Army.

The new gyro compass meets a need of modern warfare which requires precise navigation for vehicles in any area and under all conditions. Use of the gyro compass in World War II was limited because of the size and weight of the model. The old compass weighed 550 pounds compared with 67 pounds for the new model.

The gyro compass is dependable, simple to operate, and does not require any compensation or calibration calculations by the operator.

During field tests, the compass stood up under severe treatment while mounted in tanks. Designed to operate in temperatures ranging from minus 65 degrees to plus 130 degrees Fahrenheit, the compass is protected from water and dust.—*Army Navy Air Force Register*.

Underwater Oil Detectors

Geologists looking for oil sometimes set off a small explosion on or just under the surface of the earth. The waves echoed back from deep inside the ground sometimes tell them whether rock formations below are likely to contain oil.

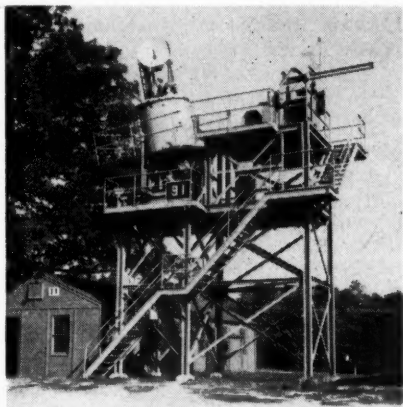
In looking for oil under the ocean, geologists have been dragging seismic devices, which record the echoed waves, along the bottom of the ocean behind a boat. In this process, cables were fouled, the recording device was knocked about, and the work was generally hampered.

Now, a method has been developed for keeping the recording devices suspended above the bottom as they are dragged along by the moving boat. This consists of a semifloating cable system which not only does away with the disadvantages of dragging the devices along the bottom, but also permits the use of multiple detectors.—*Science News Letter*.

Pitch and Roll Platform

A fire control tower providing a platform for two gun directors, one of which is on a two-axis roll platform to simulate the pitch and roll of a ship, has been completed at the Naval Ordnance Laboratory, White Oak, Maryland.

The tower will be used to determine the effectiveness of fire control systems and to devise means of overcoming any faults



The Navy's pitch and roll platform.

found. By tracking airplanes flying over White Oak, it is expected to be possible to determine where the fault lies, whether with the tracking system or the other components of the system.

Data are recorded on film with all dial readings, flight observations, and other information synchronized from the point of view of time.—*Naval Ordnance Laboratory Report*.

Machine Tools

The Chief of Naval Material has announced that approximately 10,000 machine tools—the last of a 47,000 “mothball” stock the Navy built up from World War II surplus—will be made available to Army and Air Force contractors.—*Armed Force*.

Time Aids Propaganda Effect

Propaganda may have more effect in changing opinions after a lapse of time than it does right away, because the listener may be suspicious of the source and refuse to accept what is told to him. After a while, he forgets where he heard the particular item, but he remembers the story itself. At this point, he may begin to believe it.

In experiments to test this theory, identical material was presented to different groups of listeners, but it was credited to sources of varying credibility. When the material was said to come from trustworthy sources, opinion changes dropped off to agree with the normal rate of forgetting. However, when credited to untrustworthy sources, opinion changes actually increased with the lapse of time.—*Science News Letter*.

Plastic Sleds

Light and strong plastic, glass-fiber sleds have been developed by the Army Quartermaster Corps to solve the problem of transporting small supply loads over ice and snow.

The sleds will be of two sizes, one of 100 pounds capacity, approximately 4 feet long, and another of 200 pounds capacity and slightly more than 7 feet long. Each is 2 feet wide. The small sled weighs about 24 pounds and the larger one weighs 36 pounds.

Formerly, the Army used a 400-pound capacity wooden sled which proved unwieldy in some instances. The smaller plastic sleds, which can be pulled by one or two men, can negotiate rough terrain more easily.

The new sleds will be used in Arctic areas to haul rations, supplies, small arms, and ammunition. The longer sled is also especially adapted to carry wounded, and has a cotton duck cover to provide protection for an injured man.—*Army Navy Air Force Journal*.

Mobile Power Plant

Navy engineers have designed a powerful, compact, mobile power plant capable of serving a city of 10,000 population.

A prototype plant is expected to be completed by April of this year.—*Army Navy Air Force Journal*.

Ship Production

The United States has moved to fourth place in the total tonnage of shipbuilding under construction and on order, according to a study of world orders released recently by the Shipbuilders Council of America.

In yards of this country, 85 ships of 1,082,990 gross tonnage are being built or have been ordered, compared with 30 ships of 420,000 gross tons a year ago. The figures are based on orders for 1,000-ton ships or larger, as of October 1951. At that time, the Nation's shipping orders represented 8.5 percent of the world total.

In total tonnage of shipbuilding under construction, Great Britain ranks first, Sweden second, and Germany third.

No Soviet figures were included in the study.—*The New York Times*.

Audible Road Warnings

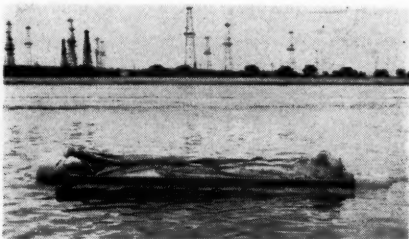
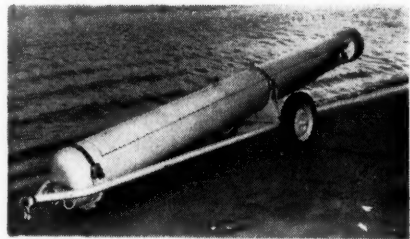
Actual words of warning will come to a driver from the surface of a highway as a result of a recent invention.

Passing over special lengthwise panels set in the surface of the paving, audible words, such as "danger," "shoulder," and "crossing," will be heard inside the car.

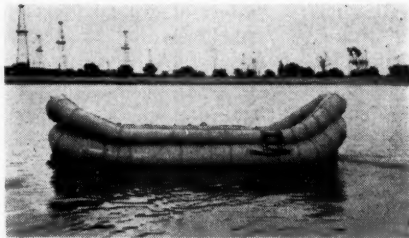
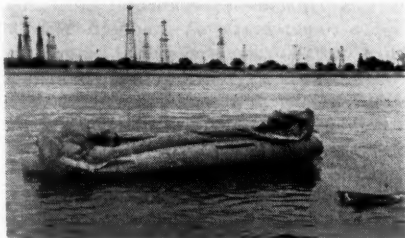
These panels have an undulating upper surface conforming to the shape of a predetermined sound wave. While set in the surface, the undulations lie above the road surface so that a vehicle traveling along the roadway co-operates with the irregular surface to produce an audible sound. The body of the vehicle acts as a sound box to give an understandable warning to the driver.—*Science News Letter*.

Radio-Controlled Life Raft

Air-sea rescue operations may be revolutionized through the use of a radio-controlled life raft developed by the Douglas Aircraft Company in conjunction with the Air Matériel Command.



Above left, the air-sea rescue life raft before being launched. Above right, the aluminum cylinder containing the life raft beginning to open under pressure of carbon dioxide. This starts within 2 minutes after launching. Below left, the raft beginning to take shape during inflation. Below right, the life raft inflated and ready for use.



The carbon-dioxide inflated rubber life raft is contained in an aluminum alloy cylinder which may be launched either from an airplane or from any ocean craft equipped with torpedo tubes.

After striking the water, the torpedo-size cylinder automatically expands into

and food and survival equipment to last eight occupants for 5 days.

The plane or vessel that launches the raft will be able, by radio controls, to start or stop the engine, steer the boat, or set the boat on any desired compass course.—News release.

Stateside Duty Cut

The Army has announced that it is making enlisted men and company grade officers available for return to overseas duty after 1 year in the United States, in order to speed overseas replacement. Previously, personnel were allowed 3 years between overseas assignments.—News release.

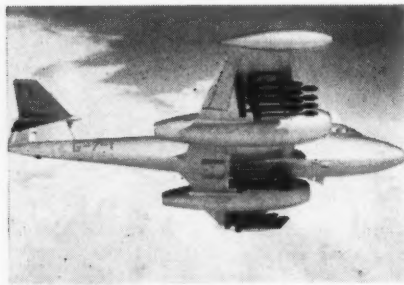
Jet Cargo Helicopter

The Navy has awarded a contract for the construction of a jet-powered "cargo unloader" type helicopter. Specifications call for a ship based helicopter capable of transferring heavy equipment to other ships or to combat units ashore under all weather conditions.—News release.

GREAT BRITAIN

Ground-Attack Meteor

Both past and present campaign experience has demonstrated the tactical advantages of aircraft operating in close support of the ground forces. For either attack or defense, aircraft capable of



The tactical ground-attack *Meteor*.

dealing with a variety of ground targets are today considered essential by army commanders throughout the world.

To fill this need, a new special version *Meteor* for tactical ground-attack roles has been developed. This new version jet will carry 4 1,000-pound bombs and 2 100-gallon wing tip tanks or 24 95-pound rockets and 2 100-gallon wing tip tanks, or various combinations of the above. The armament mentioned above is in addition to the plane's standard compliment of four 20-mm cannons and ammunition. Two additional 20-mm cannons can be substituted for the bombs or rockets carried under the center section of the plane.—News release.

Food Imports

Britain hopes to import an extra 500,000 tons of food from Commonwealth and colonial countries during the present year.

This figure will partly offset the 7 percent cut in food imports from non-Commonwealth countries which was announced by the Government late last year.—News release.

Troops in the Far East

More than 45,000 troops from Great Britain are now serving in the Far East, including 12,000 in Korea (plus Australian, Canadian, and New Zealand troops), 22,000 in Malaya, and 11,000 in Hong Kong.—British Information Services.

Atomic Heating

Great Britain announced recently that she had developed the world's first system of house heating using atomic energy instead of scarce coal.

The Ministry of Supply, which supervises the Nation's atomic energy program, said the first such installation of atomic radiators was being put into service at Harwell, the large British atomic research station.

The announcement said heat drawn directly from an experimental atom pile in the research station would be used to warm an 80-room building. Later, the system will be extended to other buildings at Harwell.

Coils of water pipes will be warmed by heat thrown off by the atomic pile, but only the hot water will flow through the heating system, eliminating the danger of radioactivity.—News release.

Jet Trainer

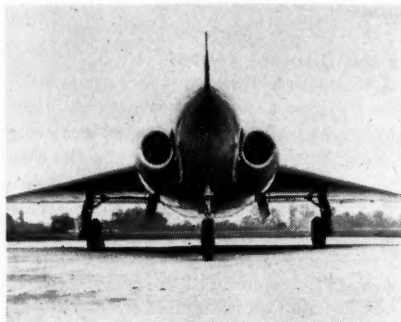
As a private venture, Boulton Paul Aircraft, Ltd., is working on a high-performance jet trainer, the *P.119*.

The new trainer, which will feature side-by-side seating, will be equipped for advanced instruction in day and night flying, gunnery, navigation, bombing, and rocket attacks. The plane will have a span of 38 feet 9 inches, a length of 42 feet 5 inches, and it will be powered by a Rolls Royce *Derwent* jet engine.

Its estimated performance includes a maximum speed of 475 miles an hour, a cruising speed of 430 miles an hour, and a fuel capacity for 105 minutes of flying.—News release.

Delta Fighter

Britain's newest jet plane—a twin-jet multipurpose Delta fighter—completed its first flight recently, and introduced a possible new era in fighter development. The new plane, designated the GA5, is the



Britain's new Delta jet fighter—the GA5.

world's first Delta jet operational aircraft, and is claimed to embody all the features required for modern aerial combat. Except for the announcement that the GA5 is powered by twin *Sapphire* engines, no information concerning the plane's speed, range, armament, or radar equipment has been released.—British Information Services.

Seek Japanese Pact

Great Britain and Japan are negotiating an agreement to maintain Commonwealth troops in Japan after the allied occupation ends.—News release.

Identity Cards

The British Home Secretary has announced that identity cards, which every Briton must carry, soon may be abolished.

Introduced during the war, the cards have been retained because of their usefulness for such purposes as rationing. However, many persons have objected to them as an infringement of individual liberty.—News release.

Ambulance Helicopter

An ambulance version of the Bristol 171 helicopter—the *Sycamore 10*—has been developed and is currently being tested by the Ministry of Supply.

In an ambulance role, it can accommo-



Above, the *Sycamore 10*. Below, stretcher patients being loaded aboard the 'copter.



date two stretchers, a medical attendant, and the pilot. In a normal communications role, it can be converted to carry four passengers and the pilot.—News release.

Air Bases

The British Prime Minister has announced that the United States may keep bases for atom bombers in Britain as long as "needed in the general interests of world peace and security."

The United States Air Force now has about 20,000 men stationed in Britain at 13 installations.—News release.

NEWFOUNDLAND

Aluminum Plant

Newfoundland soon may have an aluminum plant. The Department of Economic Development has announced that an agreement in principle has been reached with a British firm for the establishment of a plant in Newfoundland.—News release.

EASTERN GERMANY

Trade Agreement

A trade agreement between Eastern Germany and Poland, covering the period from 1952 to 1955, was signed recently in Warsaw.

Similar to a recent trade pact between Eastern Germany and the Soviet Union, the agreement fits into the East German 5-year plan ending the same time. It provides for shipment to Poland of machine tools, electrical equipment, precision and optical instruments, fuel, chemicals, fertilizers, machinery, and a series of semi-finished products. In return, Poland will supply Eastern Germany with coal and coke, zinc, and chemicals.—*The New York Times*.

TURKEY

Oil Deposits

New deposits have been discovered in the oil region of Ramandag in southeastern Turkey. The Ramandag area has a proved reserve of about 18 million tons, with the over-all estimated reserve reaching 80 million tons.—Turkish Information Office.

International Airfield

A new airfield at Yesilkoy, near Istanbul, will be opened to regular international traffic on 1 May 1952.

Complete with modern buildings and technical facilities, it is one of a ring of new airfields in Turkey planned to accommodate all types of planes on a year-round, day-and-night basis.—Turkish Information Office.

IRAN

Population Increase

Iran's population has climbed from 16 million to more than 19 million in the last 10 years, according to data released recently by the Census Department.—News release.

Border Disputes Settled

The Iranian Foreign Office announced recently that a joint Soviet-Iranian commission had signed a series of protocols settling border disputes between the two countries.—News release.

KOREA

60-Second X-Rays

A new portable field X-ray unit and a developer that finishes film in 60 seconds soon will speed treatment of battle casualties in Korea, according to an announcement by the US Army. The unit can be set up in less than 15 minutes, compared with 3 hours for present X-ray machines. Its 500-pound weight is half of the model now in use. It does not require a darkroom.—News release.

CANADA

Ease Isotope Curbs

Canada recently eased restrictions on the export of radioactive isotopes used in medical research. Under the new arrangement, applicant countries can negotiate directly with the Government's agency for uranium sales.—News release.

Fighter Aircraft

Two new versions of the Avro CF-100 twin-jet fighter are planned for production during 1952 and 1953. The first of these, the *Mark 4 CF-100*, will be ready for flight early this year, and will have more powerful armament, improved radar, and a stepped-up *Orenda* engine. This plane will be followed by a swept-wing version to be known as the *CF-103*.—*Canadian Aviation*.

BURMA

Tire Rationing

The Burmese Government has started rationing tires and automobile parts in that country in an effort to stop smuggling to Communist China.—News release.

BRAZIL

Reactivate Bases

Brazil has announced that air and naval bases in the northern and northeastern parts of the country will be reactivated and equipped with United States aid.—News release.

Foreign Ships

Brazil has authorized foreign ships to carry national cargo and engage in coastal trade for a 6-month period. Prior to this authorization, such activities were restricted to Brazilian ships. This step was taken because of the congestion of cargoes.—*The New York Times*.

EL SALVADOR

Airport Lighting

A lighting system for night flying was inaugurated recently at Ilopanga Airport at San Salvador. This is the first lighted airport in El Salvador.—*The New York Times*.

BRITISH GUIANA

Manganese Deposits

Extensive manganese deposits have been discovered in the northwestern areas of British Guiana. Preliminary tests indicate a large tonnage of rather low grade ore.—News release.

AUSTRALIA

Airfield Survey

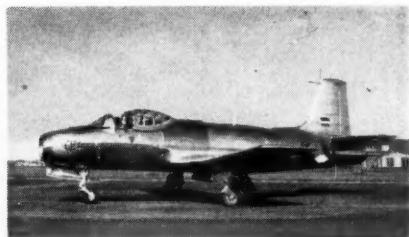
The US Air Force is surveying airfields in Australia, New Zealand, Fiji, and New Caledonia, in an effort to get up-to-date information about existing conditions at airfields used by the US Air Force during the last war.—*Australian Weekly Review*.

THE NETHERLANDS

Jet Trainer

The Netherlands has produced one of the latest developments in the field of training aircraft—the Fokker S. 14, a jet plane with side-by-side seating arrangement for the transition of pilots from piston-engine trainers to jet-propelled aircraft.

The development of modern jet aircraft has been so rapid that even the most up-



The Fokker S. 14 jet trainer.

to-date piston-engine trainer is unable to provide the final type of training required by jet pilots. Therefore, the S. 14 was developed to take care of this deficiency, and to incorporate features designed to improve training facilities and safety not found in other types of trainers.

The S. 14 is a low-wing, all-metal aircraft, equipped with a tricycle landing gear, and powered by a Rolls Royce *Derwent* jet engine. It has a span of 39 feet 5 inches, a length of 43 feet 8 inches, a maximum speed of 440 miles an hour, and a cruising speed of 400 miles an hour.—News release.

COMMUNIST CHINA

Peasant Militia

The Premier of Communist China recently announced that that country had an armed peasant militia of more than 12 million men. This force is in addition to regular field armies estimated at between 2 to 4 million men.—News release.

USSR

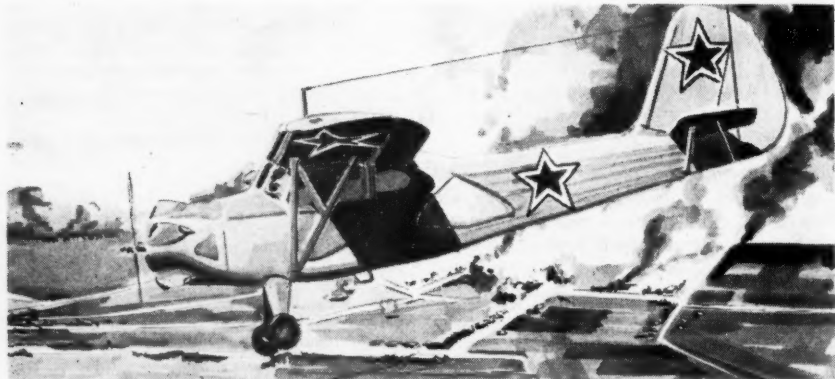
Liaison Aircraft

The four-seat *Yak-14*, built along distinctly American light aircraft lines, has blossomed out as the Soviet's major general purpose liaison airplane.

By present American standards, the *Yak-14* is unspectacular, although it looks

Nations light aircraft in Korea, now realize the importance of this type of military tactics.

The *Yak-14*, powered by a 145-horsepower engine, has a span of 39 feet 6 inches, a length of 27 feet 9 inches, a top



An artist's drawing of the *Yak-14*, built along distinctly American light aircraft lines, which has entered the spotlight as the Soviet's major general purpose liaison airplane. robust enough and has the advantage of a large wing area and generous tail surfaces. The plane appears to be the best liaison type aircraft yet produced by the Soviets; one that compares favorably with American planes in that classification. The appearance of this "flying grasshopper" indicates that the Soviets, who have watched the operations of United speed of 124 miles an hour, a cruising speed of 100 miles an hour, and a range of 621 miles.

The major US Army aircraft, the two-seat *L-19A*, is powered by a 213-horsepower engine, has a span of 36 feet, a length of 25 feet, a top speed of 130 miles an hour, a cruising speed of 104 miles an hour, and a range of 425 miles.—*Flying.*

INDIA

Institute of Technology

An Institute of Technology has been established some 70 miles from Calcutta. First of its kind in the country, the Institute will provide training and research in the practical application of the engineering sciences to industry. It eventually will handle some 2,000 undergraduate and 1,000 postgraduate students and research workers.—News release.

URUGUAY

Destroyer Escorts Purchased

Uruguay has completed arrangements for the purchase of two US destroyer escorts—the *Baron* and the *Bronstein*—at a cost of about \$1,300,000 each. This is about 10 percent of the original cost plus the refitting expense for the vessels. These ships will be the eleventh and twelfth to go to South American navies under the Mutual Assistance Program.—News release.



FOREIGN MILITARY DIGESTS

Army in Africa

Digested by the **MILITARY REVIEW** from an article by Brigadier F. A. S. Clarke in the "Journal of the Royal United Service Institution" (Great Britain) August 1951.

JUDGING from recent ministerial statements and reports in the press, it has at last been decided to expand our African forces. It is unfortunate, however, that this step was not taken 3 or 4 years ago, when expansion would have been easier, and before the scene had become darkened by political developments which may affect the project in some of the Colonies.

The purpose of this article is to indicate the role which might be allotted to our African forces, and to make comments and suggestions which may be of interest to officers who have not served with African troops. A good nucleus is available in the existing regiments, but in order to ensure efficiency and to avoid setbacks, it is essential that the expansion, organization, and, particularly, the selection of personnel be based on experience and not on wishful thinking or political expediency.

Wartime Expansion

For years, the formation of an "Army in Africa" was a vision on the part of many officers who served with the Royal West African Frontier Force or the King's African Rifles. However, although tentative proposals were made before 1939, the idea never met with encouragement at higher levels, and hasty expansion had to

be undertaken during the last war. In West Africa, this did not start until July 1940, and, fortunately, there was no interference by the Vichy French. The success achieved was mainly due to the fact that the task was carried out by a commander and staff with the requisite experience, aided by cadres of regular officers and noncommissioned officers with previous service in West African units. Nevertheless, some mistakes did occur in the hurried expansion, one of which was the enlistment of some unsuitable types. It also must be remembered that many thousands of laborers were recruited who, during the war and since, have given a wrong impression of the African soldier.

Since the last war, however, solitary voices have been raised, from time to time, in Parliament urging greater use of our African manpower, though, up to now, with no result but evasive answers. The main reasons, apart from the usual *laissez-faire* in matters of defense, may have been the cost and difficulty in agreeing on the financial contributions to be made by the Colonies, and the fear that their economic development would be impeded. The only other obstacle seems to have been the attitude of the Union Government to the employment of African troops.

As the changing world situation has increased the strategic and economic importance of Africa, adequate preparations for its defense by the Western allies are essential. It must be understood, however, that tropical Africa, especially West Africa, is unsuitable for operations by European units and formations, even if such were available. There is no doubt that Africa cannot be defended unless strong and efficient forces of African troops are in being when the emergency arises.

Employment of African Troops

The primary role of the expanded forces must be the defense of our interests and possessions in tropical Africa. The fate of Africa, however, may not be decided on her own doorstep, so it would be folly to agree to confine the service of African troops to that continent. Under existing conditions, there is always the possibility of our having to undertake operations in bush or jungle country in various parts of the Empire and its confines, particularly in Southeast Asia. Bearing in mind the lessons of the fall of Malaya, it is clear that we should maintain a striking force, highly trained and conditioned to bush warfare, ready to move at short notice. We have no British units available for this purpose, and bush warfare cannot be taught on the Salisbury Plain.

Responsibilities versus Manpower

We can no longer call on the four Regular Indian divisions, formerly available in an emergency. There is a shortage of British manpower for our general needs; fewer Regular units exist than in 1939; and the responsibilities of the Regular Army have increased. It would seem reasonable, therefore, that we should aim at using African troops, wherever possible, to relieve British units in small tropical garrisons and so free them for service elsewhere. It must be realized, however, that African troops are definitely unsuit-

able for other operations or garrison duty in Europe, in fact, in any cold climate.

The possible employment of the African forces may be summarized as follows:

1. To defend our African possessions.
2. To provide expeditionary or striking forces for operations in the tropics.
3. To relieve British units in certain small tropical garrisons in peace and war.

The first requirement involves the provision of balanced mobile forces of all arms for the local defense and internal security of the Colonies. Static troops for the defended ports, including coast defense and antiaircraft artillery, also will be necessary. The units and formations earmarked to form expeditionary forces would, in some cases, supplement the local defense troops by providing a striking force in Africa; in others they would furnish a contingent for service outside Africa.

Protection for the Colonies

Nevertheless, sufficient trained and mobile units should always be retained in the Colonies to provide for their local defense. In July 1940, the West African Colonies, having sent the bulk of their Regular troops to East Africa, were each suddenly threatened on three sides from French territory in the hands of a hostile government, with considerable ground and air forces under its control. Such a situation must not be allowed to recur.

Units for garrison duty outside Africa would have to be in addition to those forming part of the striking forces, and the units employed should be rotated after 2 or 3 years in order to maintain their efficiency.

It may be argued that the proposals mentioned above contemplate far more than can be achieved under existing conditions. They are, however, no less than our requirements warrant, and are surely not too visionary to be regarded as an objective. Difficulties, political or otherwise, must be overcome now as they have been

in the past; and it is time we dropped our apologetic attitude.

Long or Short Service

The terms of service require thorough consideration. Long service produces the better soldier; short service is not popular with the African, nor is it suitable. The African recruit learns his trade slowly and tends to become rusty or deteriorate when he leaves the service unless employed in police force work or some similar occupation under European supervision. Moreover, those who return to distant villages may not hear the order recalling them for weeks, and then their journey to rejoin may take a long time. Therefore, it is unwise to rely on reservists for quick mobilization.

The French have employed West African units for nearly a hundred years. After World War I, they seriously considered the maintenance of large numbers of these troops and, in practice, did use them in Europe. However, though haunted by falling manpower, they never formed a mass African army.

The desirability of our attempting to raise a large short-service conscript army of Africans is extremely doubtful for the following reasons:

1. The unreadiness and low military value of such a force.
2. The difficulty of finding sufficient British and African cadres for a mass army.
3. The expense.
4. Mobilization would be slow, and a complete gamble.

It is reasonable to suppose, therefore, that a mass army is neither expedient nor, indeed, possible. The alternative is dependence on long-service volunteers of whom a fair proportion should be allowed to serve 25 years for pension. The necessity for recruiting the right material and, ultimately, finance will limit the size of such an army during peacetime. However, this method would produce an army

which, though small, could be highly trained, well disciplined, and thoroughly reliable in the role which has been outlined above.

Training and Organization

Formerly we made a speciality of studying mountain warfare as applied to the Northwest frontier of India, and many Indian units were acknowledged experts in its theory and practice. Our African forces should be the recognized experts for operations in bush as, apart from other possibilities, efficiency in this respect is essential for the defense and internal security of the African Colonies.

There is no black magic or *juju* about bush warfare; no strange principles are involved. It is war in a peculiar terrain which demands the common-sense application of suitable methods to the circumstances and conditions. Bush is a type of ground which must be given due weight in making plans, just as must be done anywhere else. However, thorough training and the ability to move freely in bush are essential; untrained troops are at a hopeless disadvantage once off the roads. Bush favors those most able to take advantage of its characteristics; the jungle is *never* neutral.

Training Is Important

Experience shows that the best results are obtained if African recruits are first made into well-drilled and disciplined soldiers, thoroughly grounded in basic training and in the use of weapons. This applies not only to the infantry, but to the other arms as well. Though collective training must include constant practice under varying conditions in different types of bush, the methods applicable to more open ground should not be neglected.

The bush training of officers is extremely important. Officers must have a good knowledge of the country, the language, and the use of the compass. They should be encouraged to photograph or shoot big game, for by so doing they gain

a knowledge of conditions in the bush not attained in any other way.

Much useful experience can be gained by company marches in undeveloped country for which all arrangements should be made by the company officers. The exercise should last at least a week, the unit moving by bush paths; and it should finish with a tactical exercise against a live enemy provided by another company.

A point which should not be overlooked is that a formation organized for bush warfare requires a higher proportion of infantry troops than is usual. More eyes and ears are needed on the ground on a given frontage; all-round protection has to be provided; and detachments have to be made to escort transport—vehicles, pack animals, or porters, particularly the latter.

Mobility in Warfare

One of our weaknesses in the Malayan campaign arose from the complete mechanization of the divisions employed. Not only did the mass of transport tend to block the road, but the units themselves were road bound because even their first-line transport could not leave the road or, at least, move any distance from it. The same thing has happened to the American formations in Korea. As a result of thorough training, units can move freely in bush but their mobility is limited without transport. The organization, therefore, must provide some means of supplying units and formations when they are required to move by bush paths. This may consist of pack animals or carriers (porters) according to local conditions. Even when air supply is possible, units will need first-line transport. A man cannot march and fight in bush if weighed down with equipment like a Christmas tree.

Finally, we should aim at simplicity in training and administration. Elaborate headquarters are out of place in African conditions, and inflated staffs only make unnecessary paper work.

Personnel

In Africa, as in other parts of the world, some tribes and classes are useless as soldiers. Care must be taken, therefore, to select the right human material. The infantry and other combatant arms must be composed of men of fighting stock, preferably from the open bush, though in the auxiliary services other types can be taken. The bushman may be illiterate, but he can learn and, moreover, if coming of fighting stock, possesses the right background and necessary characteristics. This may, under existing conditions, become rather a vexed question, but it should be quite clear that in these days we cannot afford to make mistakes in this respect, and waste time, effort, and money by raising forces of little or no value. The result of enlisting certain types for political reasons was shown in 1942, when such units raised in Burma proved to be ineffectual, while those recruited from the recognized fighting hill tribes of the country did very well throughout the war.

Cadres Must Be Qualified

There is no doubt that the fighting efficiency of African troops depends on the personality and military knowledge of their British cadres. Officers for service with these troops should be specially selected, preferably from volunteers, whose terms of service should be made attractive, as was the case prior to 1939. Local commanders, however, should, as in the past, be given authority to return anyone who proves unsuitable. Another point is that everything possible should be done to keep up the prestige of the officers; commanding officers should have much wider powers than at home. This was the practice in the past; it saves courts-martial, and is understood by the African of fighting stock who respects authority.

It was often suggested in the years before the last war that our African units should have a permanent British cadre as



The changing world situation has increased the strategic and economic importance of Africa; but Africa cannot be defended unless strong and efficient African forces are in being when an emergency arises. Above, a formation of Nigerian troops. Below, African recruits engaging in bayonet practice.—British Information Services photos.



in the old Indian Army. This has the advantage that the officers have long contact with and gain an extensive knowledge of the troops, their language, and the country. There are, on the other hand, disadvantages. Long service in a tropical climate, especially that of West Africa, is likely to produce a cumulative deterioration, and even those who escape this usually tend to become stale and parochial. There also is the possibility that the best types would not be attracted by permanent service in Africa for these reasons and fear that such service would be detrimental to their professional prospects. On the whole, the old system of tours with intervals of soldiering at home would appear the better solution, officers being seconded from their regiments as heretofore, and commanding officers being selected from those with adequate experience with the type of African and unit they are to command.

Esprit de Corps Is High

The old long-service African was a very smart, keen soldier, proud of the Army, and devoted to his officers. In the writer's experience most of those who served with these troops became attached to them and left with regret. If composed of the right material and given leaders of the right quality, African units, employed under conditions which suit them, still can be expected to give a good account of themselves, as they have done in the past 50 years.

Conclusions

In addition to their strategic and economic importance, our tropical African Colonies are a reservoir of manpower, much of it of good fighting material. In considering the problem of their defense in a future war, we have to take into account our heavy commitments elsewhere, the shortage of British manpower for our manifold needs, and the unsuitability of climate for European formations. Expan-

sion of the African forces would be a partial solution of our manpower problem. Had we taken this step earlier we should now be in a stronger position and not so woefully short of efficient units at this critical time. Is there any doubt that bush-bred and well-trained African soldiers would be better in Malaya today than 18-year-old conscripts with 3 or 4 months' basic training?

Presumably the fact that first-class African troops are essential for the defense of Africa has been grasped by our Government. It has been suggested in this article that the African Colonies also should make a contribution to the defense of the Empire as a whole which, as has already been indicated, they can well do. It is desired, however, to emphasize the fact that the best results will only be obtained with African troops when they are employed under conditions suited to their constitutions and characteristics.

An attempt also has been made to consider the factors affecting the build-up, training, and organization of African forces. Some of these may appear of little importance or as mere nostalgic meanderings, but experience shows that, in practice, they have much effect. Finally, the writer would submit that there are three principles of vital importance to the success of an expanded army in Africa. These are:

1. Leadership.
2. Mobility.
3. Simplicity.

The aim of the expansion should be to provide, first, for the local defense and internal security of our Colonies; second, a striking force for service elsewhere in the tropics when required; and, third, garrison units to relieve British troops in tropical stations. If these three can be achieved, and on the right lines, then there is little doubt that we will have strengthened our world position and, at the same time, be applying the principle of economy of force in the employment and distribution of our available British manpower.

Night Operations: Surprise and Mobility in Defense

Translated and digested by the MILITARY REVIEW from an article by Major General E. Wanty in "L'Armée la Nation" (Belgium) 1 September 1951.

WITH present-day defensive organizations, frontal continuity is no longer assured. There will always be varying gaps in the line, which can pose a definite threat during the hours of darkness.

When faced with an enemy conditioned to night combat, darkness will be accompanied by the possibility of an attack. In order to overcome this problem, all personnel must be provided with systematic training which, alone, can give them the necessary confidence.

Tactical Mobility and Night Security

Front-line commanders must possess "terrain sense," and be able to interpret its advantages and disadvantages with regard to daylight or nighttime operations. In addition, they must be able to put themselves in the enemy's position; that is, they must be able to visualize what the enemy might do if he were making an attack on their particular position. Such calculations provide an answer for frustrating the enemy's plans, by acting contrary to his expectations, and they should be used in all tactical situations, whether during daylight or darkness.

Night Attacks

The general conditions for night attacks include:

1. A previous establishment of contact.
2. Observation and determination of the location of the defense elements.
3. A detailed plan of action, including the routes of approach and direction of attack.
4. A plan simple to execute.
5. Surprise, enhanced by complete silence prior to the launching of the attack, or by a rapid and accurate artillery preparation prior to the attack.

It is dangerous, from the tactical standpoint, to attempt to formulate hard and

fast rules, because in warfare anything is possible. Therefore, one cannot exclude:

1. The establishment of contact after nightfall with infantry and tank units.

2. The use of troops who have been trained in night combat, and, therefore, are able to engage in more complicated movements and maneuvers.

3. The use of terrain illumination and devices for ensuring accurate direction.

After covering the general conditions for night attacks, we are now in a position to discuss the best methods of countering these elements and of providing an effective defense.

Observation and the establishment of contact are, for all intents and purposes, one and the same. Therefore, we must be able to prevent or hinder the enemy's efforts to determine the location of our defensive elements.

The necessity for dispersion and concealment in the defense is well known. However, despite all precautions that may be taken, the enemy will succeed in learning whether certain particular terrain features are occupied. If the defensive elements are forced to open fire during this phase, the enemy will be able to determine more accurately the locations of such forces.

On the basis of this information, the enemy will prepare plans for patrols, raids, surprise attacks, or a limited offensive to secure a small bridgehead. The enemy's direction of attack, his routes of approach, and his artillery fire plans will depend exclusively on this information.

As we have pointed out before, anything is possible in warfare. If we are able to introduce a "new factor" into the enemy's plans, we may be able to create disorder or, at least, slow down the tempo of his operations. This "new factor" can be introduced by taking the initiative in

the matter of surprise—a thing which is often and wrongly denied the defense.

Invariably, the enemy will strike at a point *which he believes to be occupied*. Therefore, we must anticipate his actions and change our dispositions accordingly. In order to illustrate how it is possible to anticipate the enemy's movements, let us discuss two examples, in which we will assume that our troops are manning the defense positions.

First Example

One of our platoons has occupied a village and is serving as an isolated strong point. The enemy has access to two different axes for a night attack against this strong point, as well as being able to advance between the two. In addition, the enemy has located our platoon and is subjecting it to accurate, concentrated fire. To maintain our normal defensive organization at night is to assume at least a 50 percent risk. However, by splitting our force and making a lateral movement on both sides of our original defensive position, we will be able to provide oblique fire on the two approach routes, and create confusion in the attack columns by introducing the factor of surprise into the enemy's attack plans.

Second Example

One of our units is defending a defile—the entrance of a road into a valley—which can be easily located and subjected to night attacks from the front and the flanks. However, by withdrawing our defense position about 400 yards, we will be able to concentrate accurate fire on our previous position and confuse the enemy when he attempts to attack it.

We could provide other examples by merely advancing instead of withdrawing, or by increasing our defense in depth by reducing the number of personnel in the forward positions. Several combinations are possible, depending on the terrain. However, they all aim at *deceiving* the en-

emy, and must possess the essential quality of *mobility*.

Mobility Required

Before 1940, a unit remained literally riveted to its assigned position. It is true that there was talk of alternate positions for certain weapons, but this was about as far as it went.

This concept of a fixed defense has been relaxed somewhat since that time, but commanders still do not make adequate use of tactical mobility in changing their defense positions in order to mislead the enemy.

Night Attack Techniques Maintenance of the Direction

The maintenance of the direction of attack is a major problem in a night attack, attributed mainly to the fact that there are no visible reference points and direction is difficult to maintain with a compass alone. For this reason, a change of direction is almost impossible, it is difficult to employ reserves, the attack cannot be conducted in depth, and, therefore, night attacks must be *limited objective operations*.

However, there are tactical examples in which night attacks, even though limited in nature, have had decisive effects on the over-all operation. To cite a hypothetical example, suppose that during the day we have been able to make a fairly deep penetration into the enemy's defense positions without having been able to effect a break-through. We know that darkness will permit the enemy to bring up his reserves, repair the breach in his lines, and, perhaps, prepare a counterattack. In order to exploit our initial success, and to frustrate the enemy's potential countermeasures, we must bring up special units trained in night combat and assign them a limited objective. This action will permit us to effect a break-through, reach the areas occupied by the enemy's artillery, and seize possession of decisive terrain features. In addition, this action, carried out at night, will ensure the continuity of

the battle and will permit the use of exploitation tactics with the resumption of daylight operations.

Moreover, the increasing improvements in applied techniques may eliminate one of the major difficulties of night combat: maintenance of the direction of attack. Battlefield illumination, effected by projecting searchlight beams on low-hanging clouds, is well known; tracer projectiles have been used; and the dropping of flares of great illuminating power or even a system of radio guidance are not beyond the realm of possibility.

The Element of Surprise

The efficiency of the night attack is based, above all, on the element of surprise. If discovered too soon, there is the danger that the attack will be stopped completely or its tempo reduced. Therefore, the forward movement of the attacking units must be as rapid as possible. There is little chance that the attacking forces will have an opportunity to use their weapons until contact is made with the defense forces. It is shock power that counts.

Multiple Attacks

To attack at only one point is to court disaster, by enabling the defender to concentrate all his fire in one area. In addition, a single penetration probably will be insufficient to cause a collapse of the enemy's defense organization. Therefore, several columns, spaced close enough to constitute a massing of effort yet with sufficient intervals to permit flexibility of action, are recommended for night attacks.

Direct Attacks

In order to ensure that the attacking force will be able to maintain its direction of advance, by being able to advance in a straight line, the attack is launched from directly in front of the objective.

Energetic Execution

When all of the conditions mentioned above have been fulfilled, success will de-

pend on the energetic execution of the attack. There is no opportunity for intermediate objectives or fresh starts; each column must continue the advance without halting. A delay on the way may mean failure. In the event that a unit reaches its objective and is unable to make contact with its neighboring unit, it immediately organizes an all-round defense and emplaces its weapons in order to permit its going into action at first light.

The general picture of a night attack shows that the most critical period for the attacker is the time just before contact with the enemy. If the attack succeeds, even partially, in biting into the defense, it creates a dangerous situation for the enemy. Whether it leads to a breakthrough, a limited penetration, or a simple infiltration, the night attack poses a definite threat to the defending forces.

Halting a Night Attack

The means available to defending forces to halt a night attack can be summarized in a few words: forewarning and active and passive obstacles.

Forewarning

As regards forewarning, that is, having knowledge of an impending night attack, there is very little to be said, for the attacking troops will attempt to conceal their actions in order to capitalize on the factor of surprise. However, if one is able to detect the approach of the enemy, or discover his intentions, it is better to let him advance to a point where the defense forces will be better able to counter him with their fires, and possibly inject an element of surprise into the enemy's attack plans.

Active and Passive Obstacles

Mine fields, systematically laid out in front of the defense positions, are major obstacles in a night attack. However, they must be covered by fire to hinder the enemy in neutralizing the mines. In the event that he is able to breach the mine

fields, they still constitute obstacles, for they break up the attack formations and, if any mines are exploded, they warn the defense of the attack. In addition, barricades, barbed-wire entanglements, concertina wire, and other obstacles possess a certain value, but only if they constitute a surprise to the enemy. They must be established as rapidly as possible so that the enemy is unable to detect them until he actually encounters them during the attack.

Illumination

The use of searchlights, rockets, and other illuminating devices is not recommended for the defense forces. Their use is of greater value to the attacking forces than the defense, for the attacking forces have time to hit the ground before a rocket can provide the necessary illumination for detection, and the use of rockets and searchlights permits the enemy to locate the defense elements. If the defense has confidence in its organization to halt the attack, and to detect or slow its advance, it is better to remain concealed, but alert, and attempt to deceive the enemy or catch him off his guard. Other measures which may be used to advantage to halt or slow down a night attack are enfilading, oblique, or flanking fires on the most likely

approach corridors. Critical terrain features must be located during daylight and fire plans prepared so that effective fire can be laid on these points in the event of a night attack. By varying the fires, both in time and location, the defense will have an effective weapon against a night attack.

Summary


Summarizing, it may be stated that the defense is denied the possibility of assuming the initiative. If it remains passive, or retains the concept of fixed positions, even though they have been located by the enemy, it delivers itself to the enemy. However, if it should attempt to create surprise by modifying its organization and operations, it has a chance of halting or slowing down the attack; or even taking over offensive action.

To be prepared adequately for night operations, nothing equals practical training. In short, night combat training should be life-like and practical, and it should include the application of initiative, "terrain sense," and speed of execution. Thus constituted, it will increase considerably the efficiency of both officers and enlisted personnel, even in daylight fighting.

In the long and tragic history of warfare, the most important element of armies has always been men. Even in this day of widespread mechanization and almost unbelievably destructive weapons, this ancient principle still holds true.

General J. Lawton Collins

The Psychology of the Russian Soldier

Translated and digested by the **MILITARY REVIEW** from an article by Dr. W. Kretschmer in "*Allgemeine Schweizerische Militärzeitschrift*" (Switzerland) July 1951. 

To MEASURE the military power of a country, it is not enough to know the strength of its economic and technical reserves, even though they are important in terms of modern warfare. Rather, the military power of a country must be based on a careful consideration of the ideas, emotions, and interests of the individuals of that country.

This article will attempt to point out a few psychological traits of the Russian people, and their application to military problems. It should be borne in mind that we are including all Russian peoples in this discussion; the Eastern Slavic races, the Great Russians, the Ukrainians, and the White Ruthenians.

Points to Consider

In order to make an objective study of the present-day Russian people, two points must be taken into consideration:

1. The Russians are a gifted, adaptable, culture-loving people, open to, and capable of, every emotion, and bound to the peoples of the West by a number of ties, among which Christianity is probably the most important.

2. The Russian people must not be regarded as one because of their system of government.

If one starts his study with these points in mind, it is possible to discover many interesting facts about the Russian people.

Primarily an Agrarian Country

In spite of her increasing industrialization, the Soviet Union is still, to a large extent, an agricultural country. In fact, throughout the broad, sparsely settled agrarian districts, despite the decentralization of labor, the almost Middle-Ages-like way of life of the peasant class re-

mains practically unchanged. It is only in the industrial areas and the larger cities that the new system has been able to break the majority of the people away from their family and religious traditions.

Prolific Source of Manpower

The peasant class is the prolific source of manpower for all vocations, as well as the Soviet Army, and the latter includes officers and enlisted personnel alike. All talented and active persons are absorbed by the many professional schools and, according to their talents and political "suitability," guided into the higher positions. They occupy the more important posts of the country, both from the technical and organizational standpoint, in the educational, industrial, and military fields.

Even though Soviet teachers and university authorities repeatedly assured me that students from the rural districts display great mental alertness, eagerness, and capacity for learning, their training is oversimplified by providing specialization in only one field instead of attempting to give them a well-rounded background.

Exchange of Ideas Limited

This one-sided specialization also is furthered by the fact that a great deal of political control and bureaucratic entanglement prevent the various vocational groups from coming into contact with one another, for contact and exchange of ideas is permitted only within the same fields. The effects of this are almost negligible in the villages, but they increase proportionately according to the importance and the technology of the particular fields of endeavor.

As we have mentioned, the Russian peasantry, when not in contact with cities,

industries, or the main routes of travel, occupies an almost Middle-Ages type of civilization. However, this is not always a disadvantage, as evidenced many times during the last war. In fact, this factor was one of the main reasons for the tenacity of the Russians and their demonstrated superiority in improvisation, fieldcraft, and adaptability to terrain and climatic conditions.

✓ Improvisation a Common Trait

The Russian peasant is able, on the technical basis of a knife and an axe, to build houses, wagons, sleds, and other items in a completely self-sufficient manner. It follows, then, that under more modern living conditions, he is able to devise skillful technical improvisations. For this reason, it is easy to understand why the Soviet Union has suddenly imposed a modern technical civilization on the peasant class. This strange gap between the primitive peasant culture and the highly specialized industrialization permits us to visualize the great potential of the Soviet Union.

✓ Natural Insight of the Peasant

There also is another factor which should be included in this discussion, and that can be called "natural insight." The Russian peasant has a definite ability in the handling of plants and animals, in traveling over and orienting himself in various types of terrain, and in processing and turning to profit the raw products of nature. Directly connected with this factor is the Russian's intuition with regard to mankind, especially in the case of the Russians living in isolated areas. Many Western Europeans have been put to shame by the knowledge of mankind possessed by the simple Russian peasant.

Organization of the Community

From this, we can see that the pure and simple human qualities, without reference to rank or talents, stand in the foreground.

Functions in the village community follow naturally from the capabilities of the inhabitants, and require no special organization. It is a sort of natural communism which is based on the free recognition of the human individual. Obviously, it is bound up with the simple peasant social order. As soon as it begins to follow technical, industrial, political, and military aims, it becomes a fearful compelling force.

The manner of life of the primitive peasant is strongly intuitive and, therefore, irregular. Clocks are unknown, for the plants grow without clocks. The Western European immediately evaluates this attitude negatively, as a lack of orderliness, and forgets, in so doing, that this irrational inexactness is simply the basis of the prevailing harmonious living. Thus, it is understandable how the forced adaptation to a mechanical system of labor and military service is a principal source of discontentment of the present-day Russian.

Gaps in the Military Field

What consequences follow from these cultural bases of the Soviet's military situation? Are we to assume that the basic form of Soviet combat ability is based on a Middle-Ages type of warfare, that is, the sword and pike and the simply organized fighting force? There is no doubt that the Russian would have no difficulty in fighting in this manner. However, the modern form of armies has obtained a footing and prevails throughout the Soviet armed forces. Therefore, the same gap that exists between the primitive peasant civilization and extreme specialization is found also in the military field. However, we find here not only great possibilities for discovery and adaptation, but also factors of relative weakness which will be of special interest to the professional military of the Western powers.

Skilled Labor *versus* Production

We shall study the problem first from the standpoint of industry. No one has any doubts that economic and industrial potentials are decisive factors in modern warfare. The complexity of combat means, especially in the field of air and naval warfare, requires specialized industries, scientific laboratories, factories, and machine tools. However, this specialized technological setup cannot function efficiently if any factor is lacking. War production is not only a question of material reserves; it is also a question of skilled labor. The precision mechanical industry is, therefore, an important psychological problem connected with the natural talent and upbringing of the individual. The Western peoples have solved this problem through centuries of skilled craftsmanship. Can the Soviet Union, in about the space of a generation, catch up with this development? That is the decisive question. To what extent the lead of the Western nations in the precision mechanical industry has been cut down is unknown, because we do not have accurate data on which to base our comparison. However, it is certain that the Soviet Army was far below the other Western nations in the use of specialized weapons of war during World War II. Nevertheless, it must be borne in mind that this inferiority, under certain conditions, was compensated for by the fact that in many types of terrain, sleighs, horses, and other primitive means of mobility were more usable than modern vehicles. With the airplane, one is able, in principle, to fly anywhere, but it is impossible to travel everywhere in the Soviet Union with a motorized army.

A Problem to Solve

The serving and employment of modern combat means also are matters which involve the soldier himself and must be considered. In this connection, the Soviet Army has an interesting psychological

problem to solve. As a result of his natural intuition, the Russian soldier is able to operate vehicles and weapons as long as he is in direct contact with their controls. That is, he has no difficulty in operating a motorcycle, or a small vehicle, airplane, or motorboat. However, as soon as this contact is broken, as in the case of large airplanes, ships, or tanks, and he is required to fly or travel with the help of instruments, this new psychological problem comes into evidence. To overcome this problem, the Soviets have constructed simple weapons for initial training, and then through progressive instruction have attempted to achieve a high standard of training. Incidentally, the Soviet's machine pistols and machine guns were simple but efficient weapons, and almost equal to our own more complex weapons.

Is Specialization Possible?

To what extent the Soviet Army will be able to specialize its forces cannot be stated with any degree of accuracy at this time. However, it probably will attempt to train a small number of troops and technical personnel to a degree equaling the Western nations. At the present time, it does not seem likely that the Soviet Union will be able to achieve specialization, throughout the entire Army, comparable with the Western nations, because of the cultural and social structure of the country.

Adaptability to Climate and Terrain

On the other hand, the natural insight of the Russian soldier gives him an advantage in other ways. He is able to adapt himself to terrain and climatic conditions. Thus, the Russian soldier easily does without the comforts of civilization, and can endure many physical discomforts. His physical vigor revealed itself clearly, during the last war, in his more rapid and definite recovery from wounds, as compared with the German soldier. As re-

gards food and clothing, his requirements are amazingly small. Thus, the Russian soldier, on the average, is affected less by the terrain and weather than is the soldier of the Western nations.

Because he has an intimate understanding of nature, the Russian soldier easily constructs earthworks, digs trenches, improvises shelters, and camouflages positions. He is able to move over the terrain more skillfully and orient himself easier than the soldier of the Western nations. He has unusual ability in detecting the presence of the enemy. When we were patrolling the lonely forests, in operations against partisans, it was always the Russian volunteers accompanying us who detected the enemy first and opened fire on him.

Fighting Qualities

How is the Russian as a fighter? To begin with, we must correct the erroneous impression that the Russian is chiefly a mass-action fighter. The Germans believed this during the last war, and any country that makes the same mistake may suffer the same fate. There is no doubt that the Russian, more than the westerner, is able to develop fighting fervor typical of the mass-action fighter. However, more important is the value of the Russian as an individual fighter.

It is obvious that this quality is developed least in the mass army, and most in a guerrilla force. The partisan constitutes the basic type of Russian soldier. To a far greater extent than an official soldier of the Soviet Army, he is the bearer of the national political concepts, which are, usually, directed against a regime which is felt to be foreign. Thus, there were partisans not only against the Czarist regime, but also against the Bolsheviks and the Germans. As soon as the Russian soldier is able to free himself from the mechanism of the Army, he is a skillful, versatile, and intelligent fighter.

The German Army paid a heavy price for learning this too late.

Soviet Combat Methods

The combat methods of the Soviet Army must be understood from the point of view of their political background and the command practices arising from it. Political supervision has been so pronounced that the officers (and the higher their rank the more this is true) practically become the puppets of the political forces of the Nation, have no initiative of their own, and, thus, sink to the state of blind tools of the supreme command.

During the last war, the various arms possessed a sharply vertical command structure, that is to say, they were exclusively under the orders of their own commanders and were not able, therefore, to subordinate themselves to one another. Obviously, with such a system, co-operation and co-ordination between the various arms was extremely difficult to achieve. In addition, whenever liaison between the various arms was interrupted, the command structure disintegrated, with a resultant influence on the morale of the fighting troops.

The last war brought us no end of proof that, in their hearts, the Russian people hold their Government in abhorrence. The Russian soldier fights with conviction only for the defense of his native soil against an invader, or for liberation from a political system that is strange to him.

All political and military orientation with regard to the Soviet Union must consider her greatest weaknesses. Obviously, these do not lie in the numbers of her soldiers nor in the strength of her industries, but exclusively in the internal political and ideological concepts of communism. Therefore, it seems much more important to obtain an accurate picture of the psychological situation and base an effective policy on it, rather than to count

tanks and calculate the yearly output of factories.

Conclusion

The Russian soldier is no better and no worse than our own. His strength comes

from the fact that he fights more fiercely when he is defending the fatherland. By attempting to understand the motivations of the Russian soldier, we will be in a better position to cope with him, in the event of a future war.

Preparation for Battle

Digested by the **MILITARY REVIEW** from an article by
Air Marshal Sir Robert Saundby in "The Aeroplane" (Great Britain) 14 September 1951.

I STILL come across people who believe that little preparation had been made for the Battle of Britain before the outbreak of war in September 1939, and that, even then, not much was done until 10 May 1940, when Mr. Churchill became Premier and Lord Beaverbrook formed the Ministry of Aircraft Production. Few people, perhaps, hold so extreme a view as this, but many are inclined to think that the aircraft, weapons, and methods by which the battle was won were mainly last-minute improvisations.

The truth of the matter is, of course, very different.

'Thinking' About the Problems

We began to think about the problems of the air defense of this country as soon as the "run-down" after World War I had been arrested, and the newly formed air staff had settled down to its work. For some years its activities were confined to thinking, because no money was available for the provision of anything more concrete.

In 1924, the whole of the Royal Air Force, at home and abroad, possessed only two fighter squadrons, and no bomber squadrons at all worth the name. Germany had been disarmed, Russia was remote, while France and Italy were our allies in the recent war. The skies seemed clear,

and matters of defense scarcely entered the heads of the politicians.

ADGB Formations

Concrete preparations for air defense began in 1925. In that year, the Government, alarmed at the low ebb to which our once powerful Air Force had sunk, authorized a scheme for a new air command, to be called the Air Defense of Great Britain. It was intended that this command should build up, in due course, a force of 52 squadrons. Realizing that our air defense did not depend solely on fighter squadrons, it was to be organized in two formations; the Fighting Area with 17 squadrons, and the Bombing Area with 35.

This decision was the outcome of a policy, accepted by the Government, of providing ourselves with an air force not inferior to that of any foreign power within striking distance of our shores. At that time, the only air force which could come within this definition was that of France, and no one in their senses believed that the French were in the least likely to attack us. Thus, the growth of the new command, in the absence of any real threat to our security, was very slow, though everybody realized that some expansion was necessary if the Royal Air Force was not to fade away as a fighting force.

Disarmament—Fact or Fancy?

By 1930, after five leisurely years, a few fighter and bomber squadrons had been formed, but, in 1931, the Disarmament Conference, held at Geneva under the auspices of The League of Nations, began to exert an influence on our defense policy. Among the proposals being discussed were the total prohibition of air bombardment, and the restriction of all military aircraft to an unladen weight of 3,000 pounds. The Treasury, which for some reason seemed to believe that these proposals might be accepted by the nations of the world, took the line that there soon would be no need for bombers and, possibly, even for fighters. They refused to authorize new specifications for military aircraft, for whatever purpose, which exceeded an unladen weight of 3,000 pounds. In practice, the only type for which the new air staff requirements were permitted was a small general-purpose aircraft, suitable for air control work in undeveloped countries. Thus, by 1932, very little had been done.

The problem of air defense has two main aspects. First, it is necessary to ensure that the fighter can intercept the bomber, and, second, interception being a difficult matter, it is essential that a fighter should have an armament powerful enough to ensure that, when it has made contact, it can destroy the bomber.

By 1932, we had made but little progress in the solution of either of these problems. Methods of interception, and the twin-gun armament of our fighters, were the same as those used at the end of World War I.

It has been realized that one twin-gun fighter could not produce the density of fire needed to destroy a bomber quickly and certainly, and so a system had been devised, using a combination of "V" formations, each of three fighters, to carry out simultaneous attacks against a bomber formation. In time, a whole series of com-

plicated attacks, called the Fighting Area Standard Attacks, had been evolved.

Squadrons found it difficult to learn to execute these attacks, involving as they did many intricate maneuvers in formation, and there was a real danger that our fighters might fall down on their job.

Tactical Trifling

I think that I can claim to have been one of the first to draw attention to the inadequacy of our fighter armament. I took the opportunity, in submitting an essay in 1932, of condemning the twin-gun fighter and the appallingly elaborate tactical system which sought to offset the weakness of its fire power.

I compared the Fighting Area Standard Attacks with the Admiralty "Fighting Instructions" in vogue during the latter part of the eighteenth century. The rigidity and complexity of these tactical instructions so cramped the offensive spirit and tied the hands of our commanders at all levels that sea fighting, in the words of Admiral Mahan, was reduced to "an exhibition of tactical trifling." There was reason to fear that the Standard Attacks would have a similar effect on our conduct of the air battle.

I strongly advocated a six-gun fighter, which would, in itself, carry the same fire power as a formation of three twin-gun fighters. I also put forward a greatly simplified tactical system.

This essay was circulated to all officers down to, and including, the rank of squadron leader. It is probable that it encouraged many experienced fighter pilots to be dissatisfied with the Fighting Area Standard Attacks and to think seriously about the advantages of the multigun fighter. This trend of thought led, in 1933, after the breakdown of the Disarmament Conference and the rise of Hitler in Germany, to the issue of air staff requirements which produced the *Hurricane* and *Spitfire*.

By 1936, large-scale production of the

multigun fighters, now proved and tested, was ordered.

The Rest of the Problem

We had made preparations for a high-speed, powerfully armed fighter, but the other half of the problem—how to put the fighter into the position to attack the bomber—remained to be solved. At first, we put our faith in acoustics. Acoustical mirrors which could, in favorable circumstances, pick up the sound of a bomber formation 20 or more miles away were built and tested. They were better than the unaided ears of the Observer Corps watchers, but could not give early enough warning to enable us consistently to intercept the bombers. Some new approach to the problem was needed.

This came in the form of radar, or "radio-location" as we then called it. We built an experimental station at Bawdsey and soon started tracking the flights of Coastal Command aircraft over the sea, and of civil aircraft flying to and from the Continent. By 1937, we had advanced sufficiently to approach the Treasury with a scheme for 20 stations at intervals round our shores, to cover the approach of aircraft over the Channel and the North Sea.

These stations had to be built on the coast, usually on high ground, and they were plainly visible miles out to sea. We thought the Germans would be certain to take an interest in them, and perhaps discover what we were doing. The "cover plan" was to give out that they were direction finder stations, and that apparently satisfied the Germans.

There is strong evidence that this system came as a complete surprise to the Germans, who, at first, could not understand how we were able to intercept them with such regularity.

When war came, our system of radio-location was working, and all our squadrons were trained in the new method of ground-controlled interception. We had in our possession a few hundred *Hurri-*

canes and a few dozen *Spitfires*. As things turned out, we were to have nearly another year before we were called upon to face the all-out decisive battle on which our future depended.

A Mystery to be Solved

After the outbreak of war, we had one great advantage, which it was important to exploit to the full. We had a chance of testing out our ideas and weapons in actual combat against the enemy. Every opportunity was sought of gaining battle experience, but the Germans were very cautious and hard to find. Gradually, the number of air battles increased, and they were all carefully recorded and analyzed. Before long, we noticed that the *Hurricanes* stationed in France had a persistently larger proportion of "kills" to interceptions than those of Fighter Command in this country. At once we set to work to find the reason for this.

There had been a difference of opinion, before the war, as to the best alignment of the eight guns of the new fighters. Some held that they should all be concentrated to meet at a point, say 200 yards ahead, while others maintained that the guns should be aligned to give a less dense pattern. It all depended upon how accurately the average pilot could aim his fixed guns under combat conditions, and this could not be determined in peacetime.

The fighters stationed in France had "concentrated" guns, while those at home in the Fighter Command had a more dispersed pattern. It became clear that the concentrated pattern gave the better results, and, therefore, it was decided to "concentrate" the guns of all aircraft of the Fighter Command. This was an important decision, and it greatly improved the "killing power" of our fighters. It shows how important it is, at the beginning of a war, to study and analyze every scrap of combat experience.

When the war broke out, we had no self-sealing tanks in our aircraft. This caused

serious bomber losses in our early attempts against the German warships. This was not an oversight, but the result of a deliberate decision. It had been ruled, at a very high level, that the added weight of these protected tanks was unacceptable. The decision proved unsound and was immediately reversed. Fortunately, in the meantime, considerable preparation had been made in case war experience showed that self-sealing tanks were necessary. A large-scale plan was at once put into operation, and, by 9 April 1940, when Hitler invaded Denmark and Scandinavia, all our operational aircraft were equipped with them.

With the formation of the Ministry of Aircraft Production in May 1940, we had quite a bit of trouble over this question of operational fitness. The Ministry was formed just when we were trying to obviate faults in several types of aircraft by incorporating in them certain modifications that battle experience had shown to be vital. But the key men in the new Ministry were mostly civilians chosen for their "drive" and business acumen. An airplane was just an airplane to most of them, and they were determined to produce as many "airplanes" as possible. Such matters as battle-worthiness, vital operational modifications, and an adequate supply of spare parts meant nothing to them, and were dismissed as the idle expressions of obsolete air marshals. It took time that could ill be spared to persuade them that we could not hope to match the Germans for numbers, and that we must have quality to win the battle.

Modifications Are Vital

I am firmly convinced that the kind of flexibility which enables vital modifications to be incorporated on the production line, with the minimum loss of output, is a tremendous asset to any air force. I am also convinced that it is more a matter of flexibility of mind on the part of the production engineers than anything else.

Many a time have I been warned of the dire consequences of insisting upon an "operational" modification but, in practice, they have never fully, or even largely, come to pass. This has been due, no doubt, to the co-operation and ingenuity of those responsible for production.

And so, when we came to the supreme test of battle, it was a small force of superb quality, the product of 8 years of thinking, experimenting, building, and training, molded from the finest human material and splendidly led, that we pitted against the vast mass of the *Luftwaffe*, flushed with victory in Europe. It was a small force, but it succeeded in winning one of the few decisive battles of the world.

On 15 September 1940, the Battle of Britain reached its peak and turning point. On that day, those who had labored long to prepare for the struggle saw the vindication of their work and their ideas. Much would remain to be done before we could reach final victory, but we had defeated the giant, and Hitler had set his foot upon the road that was to lead him to an inglorious suicide in his bunker at Berlin.

The Air Ministry has made mistakes, and has taken its full share of "knocks" in its relatively short existence. But it made few mistakes in the preparations for the Battle of Britain, and it is right that credit should be given where it is due.

Not long ago I received a letter from a distinguished retired Army officer, in which he wrote these words: "There is no doubt that history will show that the major element, apart from our pilots, in making victory in the Battle of Britain possible, was the fact that the *Hurricane* and *Spitfire* were ready. . . . It was the prewar Air Ministry which really saved the world."

Those, whether in the front or the back rooms, who worked to prepare the Royal Air Force for its first great challenge would wish for no finer tribute than that.

Vertical Envelopment

Digested by the MILITARY REVIEW from an article in "Flying" (United States) November 1951. n

THE biggest ambition of the Marines is to have sufficient helicopters available so that landing forces will have the capability of conducting the main effort of an amphibious assault with helicopters in a vertical envelopment. The ship-to-shore movement principally will be one of helicopter air transport. The limitations on the aircraft are, of necessity, exacting; the most critical of these being their physical size.

Exploiting Mobility and Flexibility

Marines will always be called upon to protect American interests overseas, intervene in situations short of war, or to spearhead an actual invasion in the prosecution of a war. To cope with this, Marine units must be mobile, flexible, and versatile. Therefore, helicopter squadrons must be initially carrier based and integrated with the landing force and its combined arms and supporting tactical aircraft. Stowage requirements, size, limitations, and payload capacities will govern the number of them committed for any specific operation.

With the development of the larger capacity assault helicopters, and with an increase in squadron numbers, portions of the ship-to-shore vertical envelopment concept will be tested and evaluated until sufficient helicopters are obtained to make the main effort of an amphibious assault. Then will culminate the efforts of those Marine Corps officers who, in 1946, undertook the development of a concept for ship-to-shore transfer of the landing force that would survive an atomic blast and negate enemy beach defenses.

Helicopter Employment Proved

Through the continuous efforts of Marine Helicopter Squadron HMX-1 at Quantico,

Virginia, Marines have been able to prove to themselves that employment of helicopters *en masse* is feasible. Flight deck procedures for operating large numbers of transport helicopters on repeated flights from a carrier at sea have been developed successfully. Instrument flights, formation flying under full load conditions, and mass formation landing of these helicopters in rough terrain have been demonstrated numerous times.

Externally slung howitzers and other supplies and equipment have been transported and delivered from a hovering position even with obsolete type 'copters. The future is indeed bright for the Marines equipped with the more modern craft. Helicopter-borne landing forces will be the air cavalry of the future amphibious operation.

Launching the Attack

As visualized now, an assault would begin upon order by the attack force commander with the launching of assault troops in helicopters and amphibious vehicles from carriers and other ships in dispersed formations well at sea from the objective area. En route, the commander of the helicopter-borne assault force must be prepared to make decisions altering the landing plan, either as to the time or place, as circumstances require. However, thorough prior planning for alternative landing areas would be completed before becoming airborne, in order to have properly integrated air support and naval gunfire, should it be necessary to execute an alternative plan.

Specialized organizations within the helicopter operating units will develop sound techniques for controlling the mass take-off and landing on helicopter transports and in the objective area. Guidance

of the helicopters by a central control organization will result in their maximum effective utilization.

Objectives to Accomplish

Having successfully negotiated its way to the landing area, the helicopter-borne component would land behind the bulk of the beach defenses, where it would proceed

ments of the tactical plan and, secondarily, by the limiting physical factors of helicopter handling and the technical characteristics of the guidance system used. The mobility and flexibility of the helicopter would be exploited fully during this phase of the rapid movement and reconcentration of forces, particularly to meet the threat of counterattacks.



During recent maneuvers, Marines were able to disembark in 20 seconds to gain a foothold on a beachhead to demonstrate the effectiveness of an assault by helicopter-borne forces.

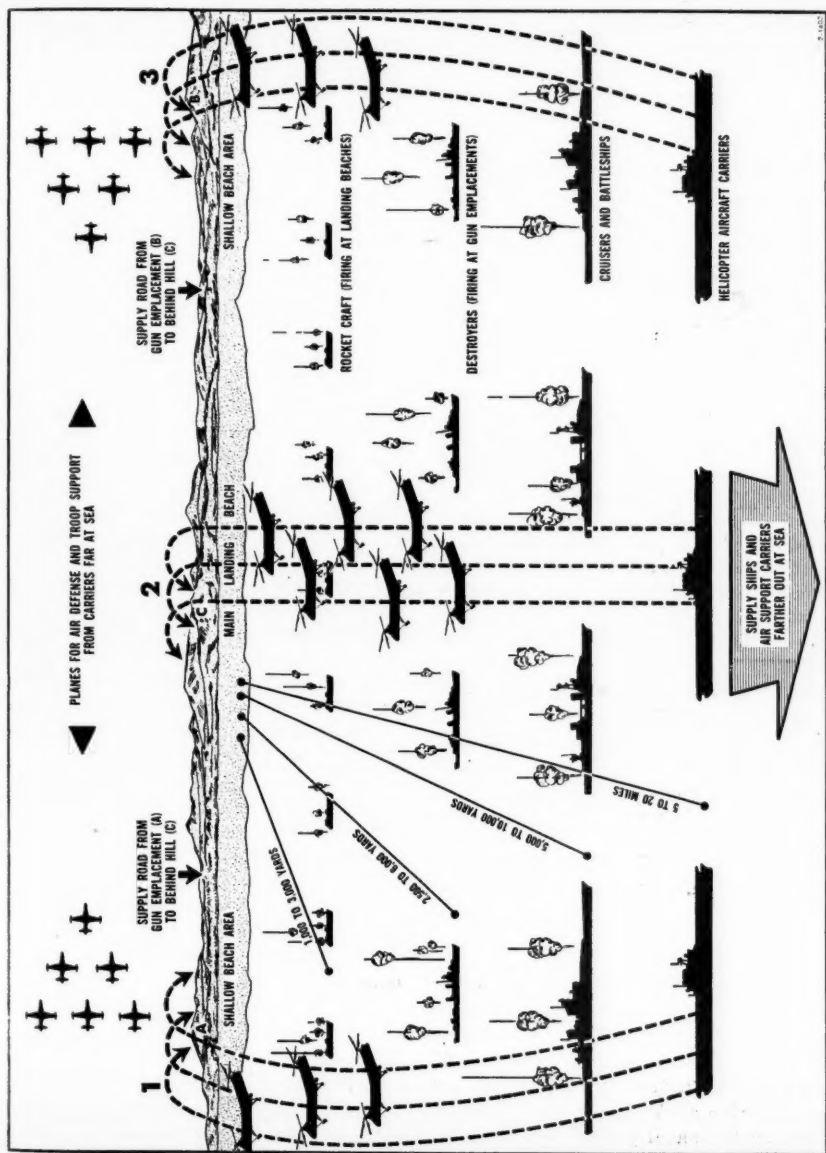
toward the accomplishment of three objectives:

1. The isolation of the beachhead by the seizure of positions on the beachhead line and by blocking or delaying the movement of enemy reserves.
2. The reduction or isolation and neutralization of enemy positions dominating the beach and its seaward approaches.
3. The location of immediately accessible approaches to and across the beach.

Helicopter tactical formations would be determined, primarily, by the require-

Potential Threats

The principal threats during the early phase in which the helicopter-borne troops are carrying the burden of the assault are those presented by enemy air attacks, as well as airborne and mechanized counterattacks. The dispersion which characterizes the operation is, in itself, a considerable measure of protection against air attack. To further reduce the air threat and to counter the threat of an airborne attack, a strong cover of high performance aircraft is essential.



Provisions for meeting the threat of mechanized attack would be made by primary dependence on the utilization of mass weapons. Bombs, rockets, gunfire, and incendiaries would destroy or break enemy concentrations. Ultimate dependence on helicopter-borne troops equipped with lightweight antitank weapons and antitank mines would fend off attempted penetrations.

The surface troop components, under cover of the successes achieved by the helicopter-borne troops, would approach and assault the beach in a conventional manner. They would effect a juncture with the helicopter-borne troops, and continue the reduction of enemy strong points within the beachhead perimeter.

Early logistic support would follow the pattern of the assault; helicopters delivering supplies to inland positions, and amphibious vehicles transporting material across the beach line. In the early phase of the assault, the mass of shipping would remain in a designated area, serving as a base of supplies from which cargo would be shuttled to the landing area by helicopter.

The remainder of the operation would follow the conventional pattern, except for the following difference: the landing force commander would possess complete mobility for the bulk of his forces by using the helicopter; he could seize critical areas of key terrain features, particularly those that were lightly held or undefended; and the enemy would be confronted continuously with the three dimensional attack.

Tactical Example

The figure on page 93 provides an illustration of one of the many possible tactical situations in which a vertical envelopment by helicopter-borne forces could be employed. First, carrier air strikes and naval gunfire work over the landing area. Then, as the naval gunfire is shifted inland, air strikes hit landing areas with

napalm and antipersonnel bombs. As soon as the air strikes are completed, troop-carrying helicopters land at positions 1, 2, and 3. Supply helicopters follow with heavy guns and ammunition. Troops landing in area 2, behind the protection of Hill C, capture the roads between the enemy supply dump and gun emplacements on Hills A, B, and C, then attack the enemy from the rear. Simultaneously, flank attacks are made from positions 1 and 3. After gun emplacements on A, B, and C are neutralized, surface landing craft use the main landing beach. Carrier-borne aircraft keep control of the air throughout the entire operation.

Characteristics of Helicopter-borne Forces

The military value of the helicopter-borne assault in amphibious operations is clearly evident from the following tabulation which contains the characteristics of such forces. Note that many of these are peculiar to this type of force.

1. Through the use of the carrier-based transport helicopter, in conjunction with the extensive range and power of the Navy, it will be possible to initiate helicopter-borne assaults at the same range as the fleet. This distance is far beyond the combat radius of conventional type troop-carrier aircraft.

2. Landing of the troops and equipment in combat and organized tactical units is achieved. This permits immediate control by the troop leader over his men during the most critical period of the assault.

3. The World War II situation in which the attacker's power at the water's edge was a minimum and the defender's at its maximum can be reversed.

4. By mounting antitank weapons, armored attacks can be repulsed or seriously hampered.

5. A force may be landed in its selected formation for the assault. The supporting arms can be properly disposed in relation to the direction of the attack.

6. The reserve is committed at any selected point, at any selected time, in any formation, and can attack anywhere.

7. The conventional forms of ground warfare, such as ground security elements, approach march formation, and deployment, are not necessary. The place of ground contact cannot be determined by the disposition of the enemy.

8. Logistic support comes from the air, during the second and subsequent trips of the helicopters.

9. Should displacement become desirable, the helicopters return, lift the helicopter-borne assault force, and reland it in the desired locality.

10. There are few—if any—areas restricted to helicopter landings, and even in restricted areas the helicopters can hover while loading and unloading.

11. The troop elements of helicopter-borne assault forces, when in the air, can alter their landing formation.

12. These forces can seize objectives in

areas inaccessible to other modes of transportation.

13. The small landing area required, and the ability to lift and land vertically, make it possible to concentrate large forces in a small area in a short period.

14. Conventional ground fortified areas can be ignored, assaulted from the rear, or enveloped with relative ease.

Perhaps the greatest contribution by the helicopter to the assaulting landing force is the favorable probability of survival under atomic attack. The natural dispersal of the helicopter waves en route to the landing areas, coupled with their relatively high cruise speeds, offers the solution to the ship-to-shore operation which is impossible of attainment with present or projected surface assault craft. It permits immediate assault of enemy areas which have been subjected to tactical atomic bombing. The vertical envelopment of enemy troops whose senses are stupefied with shock would assure nothing less than success to the attacker.

The struggle in Korea represents a highly specialized kind of ground warfare. We are following rules which have excluded true *air* warfare. That is the way we chose to fight it, and the enemy has not forced us to change our methods. . . . We have concentrated on direct and immediate assistance for our troops engaged in ground combat. . . . But we should be careful not to confuse limited action of this type with the sweeping pattern of modern warfare between great industrial nations.

General Nathan Twining

The Social Group, Infiltration, and War

Translated and digested by the MILITARY REVIEW from an article by Major Amund Bjerke in "Militær Orientering" (Norway) 10 September 1951.

IT HAS been said many times that strategic and tactical principles are immutable. Every time some younger officer questions this statement, recognized authorities show him the correctness of this view.

The Changing Picture of War

However, when we consider how the over-all picture of war has changed since the Franco-Prussian War—how modern warfare has developed from its simpler forms until it now includes all the individuals and institutions of a social group—it is clear that there have been many changes which affect all aspects of conducting a war.

For example, in the Franco-Prussian War the troops were able to fight in the front lines with the confidence that as long as they held their positions their homes were secure against the enemy's brutality. Even in World War I, those at home were in relative security, although there was a little bombing in England and, at the end, the food situation was rather critical in Germany. However, in World War II, the soldier at the front knew that thousands were dying every day at home from the effects of the enemy's weapons, even though the troops at the front did their best and held the enemy. And developments since that time have aggravated this situation.

Therefore, we must adjust ourselves to a new picture of war—an over-all picture which will look entirely different from the one that sufficed for World War II. The sooner we recognize this and adapt ourselves and our combat means accordingly, the better it will be for all of us.

The Social Group

The social groups of the world have

now joined themselves together into two blocs, with the democratic social groups in the one (the West bloc) and the so-called "peoples' democracies" in the other (the East bloc).

In the democratic social groups we recognize certain fundamental freedoms: freedom of the press, freedom of speech, freedom of assembly, freedom of organization, and individual freedom, to mention but a few.

The peoples' democracies have the same elements, minus the word freedom. The latter can best be replaced by the word *state*; that is, state press, state organization, and so forth.

As freedom of organization is one of the freedoms found in the free democracies, nearly every activity has been organized to such an extent that they may now talk of an "over"-organization of the social groups. Labor, the arts and sciences, sports, and youth activities are organized into great associations or unions. In addition, anyone can start an organization for this or that purpose, and no one checks the activities in which it engages. The result is that an organization, social in nature, may serve as a cover for activities which do not serve the group's best interests.

In the peoples' democracies, a comprehensive control over the entire life of the social group has been established. With a strong police organization (both regular and secret), operating with methods which, fortunately, are not used in the free democracies, the population is watched to a degree which borders on persecution.

For example, the German social group was tied and bound, and declared to be incapable of managing its own affairs, politically by the Nazis from 1933 to 1945.

As a result, it was impossible to influence it from the outside by ordinary political means. Germany, and the social group which had grown up during that period, had to be crushed by force of arms before the German people could obtain peace and the chance to win back their political liberty. During that period, there was no political power in the country which could assume control and bring the war to an end, as happened in 1918.

This same type of control exists in many countries today, and the chances that the social groups or the people themselves will be able to recognize the need for co-operation with the rest of the world and cease hostilities appear equally small.

Infiltration

Since 1945, the term "infiltration" has assumed a startling reality, because the people of the Western nations have had their eyes opened to the increased activity in this field. It threatens to break up the social organization which has been built up through successive generations, and reveals a direct connection with preparations for open war. We have now come to realize this fact, and the battle against infiltration has begun with growing intensity, but it still will be a long time before it can be said that the Western nations are sufficiently armed to be able to fend off the danger which threatens.

The conflict in Korea has shown that such national infiltration may cause the outbreak of open war. Until recently, the term "infiltration" usually has been regarded as a purely military maneuver conducted by small patrols which, during darkness, slipped by the outposts of the defense for purposes of reconnaissance and limited attacks. Since the development which has taken place during the last few years, both military and civil authorities are beginning to accept the fact that infiltration is a many-sided problem which involves both the military and the political fields. To a seasoned pro-

fessional soldier, many of the military operations which have been undertaken in the conflict in Korea would seem strange, if he did not take into consideration the infiltration factor which, several times, has upset the maneuvers of the United Nations' forces. This factor can produce the same tragic results here in Europe if we are not cognizant of how a social group can be undermined and prepared for an enemy conquest.

There is much to indicate that the conflict in Korea was set in motion as a test of the effectiveness of permitting infiltration tactics in a social group to expand to include open warfare. One is moved to draw parallels with Hitler's experimentation with the means and tactics of the *blitzkrieg* in Spain before World War II.

Regardless of what position a statesman or officer occupies, he must understand clearly the double nature of infiltration tactics and have a clear picture of the developments and events which characterize this new form of warfare. Because of space limitations, it is not possible to go into detail here, but, to set the reader's interest in motion, attention will be directed toward a number of factors which characterize it.

As a background, the reader must understand that a modern war will be a war between, and inside of, social groups; a revolutionary war which does not begin with the first shot, but long before. It starts with infiltration tactics in time of peace, an infiltration into the social group, a "cold war" which merges directly into actual warfare.

Revolutionary War

It was Karl Marx who introduced the concept "revolutionary war" and who, in modern times, laid the theoretical foundation for this form of warfare.

Marxism was founded and developed in the preceding century following an increase in the industrialization of the European countries, coupled with an increase

in the property-less classes in the social groups. This growing segment of the population had little or no political influence in the management or administration of their particular countries. To attain this, they first had to break the domination of the then ruling classes. A revolutionary war was, therefore, the method they had to use in order to take over the political leadership of a country. However, in and of itself, it was never conceived as a means of warfare against another country.

At the end of World War I, the Communists seized power in Russia in accordance with this concept, and overthrew the government which had been set up after the Czar was forced to abdicate. Since that time, this form of warfare has been adopted as a link in the tactical instruction in the Soviet military schools and in the political schooling of the Communist Party's leaders the world over. However, it was the Germans who first attempted to put these ideas into practice with the object of conquering another country. This was accomplished by propaganda, the establishment of political infiltration in the opponents' countries, and with the assistance of military demonstrations and threats. Even though a great amount of effort and money was spent in this field, it was not sufficient to win World War II, although good results were obtained, particularly in the conquest of Austria, France, and Norway.

The Eastern bloc states have gone much further in this field and have adopted the tactics of the revolutionary war to obtain the Soviet Union's old political objectives: ice-free ports to the open sea, the security of their western frontiers in Europe, and domination in the Orient.

The contents of the bottle are the same, even if the label is new.

What is it, therefore, that characterized revolutionary war? Roughly speaking, it is the underground and infiltration activ-

ity that is set in motion by the attackers in order to undermine the defense's social system and knock the props from under their opponent's defense organization in time of war. Revolutionary war is divided into two main parts: peacetime activity (the cold war), and the employment of the results of the cold war in actual combat. The first is a political infiltration of the social group; the second, a military infiltration of an extent unknown to earlier, orthodox warfare. There is really no sharply differentiated line between these two elements of warfare. The transition from the cold war to actual combat cannot be defined easily, nor can the development of the cold war be controlled easily with the means that the free democracies have at their disposal.

The Cold War

The aim of the cold war is to conquer a state from within, preferably without engaging in actual warfare.

The action comprises an intense activity on the part of the attacker in the form of a political infiltration. This commonly begins by the attacker planting his own personnel in the administrative organization of the opposed state; by occupying key positions in its economic system, its political parties, its news services (press and radio), its police organizations, its transportation system, its trade organizations, its schools and educational system, its youth and sports programs, and, especially, in its labor organizations. Military staffs, departments, and industries are, of course, objectives, and an enemy always manages to make contacts here in spite of the best of security systems.

Alongside this activity, a strong and reliable network of agents develops, which fulfills the double mission of checking and reporting.

When this organization begins to assume form, its fields of action are enlarged and its efficiency increased. It now

stirs up strikes and causes unrest, engages in sabotage and propaganda activities which sow discontent, nourishes budding dissatisfactions, and creates unrest and a lack of equilibrium in the social group.

If the attacker is able to assume control over a political party in the state which is being attacked, it is a distinct help. When it comes to the East bloc's activity in this field, there are no difficulties, because Communist Parties are found in all countries, legally or otherwise.

Czechoslovakia's tragic fate is a warning. In 1948, the Czech social group was so infiltrated that the Soviets were able to carry out a political conquest of the country without war. The Soviet occupation forces constituted the necessary threat. Afterward, the infiltration continued, and, with the undisguised employment of force and power, all possibility of opposition has been done away with and the country itself is no longer able to formulate independent policy. Only force of arms will now free that country.

The only effective means to avoid this situation is to create a healthy state, with a contented population, where the individual, the people, and the political parties are awake and on guard against the danger of infiltration. The enemy interferes in everyone's manner of thinking, determines political persuasion and views of life, and is able to make pawns of the citizens of a country. The tragic but famous "Stockholm Peace Appeal" shows how even men of opposite conviction can be used by the enemy in the cold war.

Actual Warfare

So much time has elapsed that even the picture of actual warfare is beginning to disappear. Of the two forms of war—cold war and actual war—it is natural and understandable that the latter draws the greater amount of attention from the professional soldier. The danger in this

is that he will not be attentive to the first form and the intimate connection between these two military elements. I shall, therefore, cite a few factors which may clarify the relationship.

We must regard it as a fact that the organization which the enemy has planted in the social group before the opening of actual warfare is absolutely necessary as a basis for the military infiltration which is to come. Besides conducting attacks and sabotage activities, this organization has, as its special mission, the paving of the way for a regular attack with specially trained units which are carried into the country behind the defense lines.

War matériel is, today, so highly developed that, theoretically, any part of a country can be reached. Experience shows, however, that many targets cannot be attacked advantageously by regular combat means. This being the case, it is significant to note that a well-developed underground organization in the country subject to invasion is able to conduct such attacks.

Because it is necessary to build up such an organization before the war can begin, the time factor enters the picture as a far more important element than at any previous time. A long time is required to build up an underground organization, and the side which neglects to make use of this time during the cold war loses an advantage over the enemy during the course of actual warfare. Even the atom bomb will not suffice in this case, and an overwhelming air force is not enough to counterbalance the effects of a well-conducted infiltration.

Are We Arming Ourselves?

The thought is constantly being expressed that the Marshall Plan has been the thing which has made it possible for us to hold our own in the cold war. Why is this? Because, naturally, it provided the economic foundation for the recon-

struction, industrial production, and trade between the countries affected; making possible a raising of the standard of living in Europe. Dissatisfaction, discontent, and the cold war have not gained headway with us, and, if we have not won the cold war, we have, in any case, been able to limit its effects and strike back.

The East bloc's military strength becomes continually greater and constitutes a potential threat. Therefore, the free democracies have found it necessary to engage in a rapid augmentation of their military strength. This means the assumption of a great economic burden which will affect our ability to hold our own in the cold war.

This rearmament program already is

beginning to create discontent, wage controversies, political unrest, and decreasing economic stability. When these burdens hit their peak, it will mean a crisis in the cold war, for the effects of this may mean that we have lost the war before it has begun.

We can beat that crisis, and, at the same time, win in strength of arms. However, we must maintain social group solidarity by making the "man in the street"—the common citizen—aware of the intimate connection between the cold war and actual warfare. He must be made to realize the fact that he, in his civilian clothes, in his daily life, and in his work, is as much a soldier in the cold war as the armed soldier is during actual combat.

Combined Operations Past and Present

Digested by the MILITARY REVIEW from an article by
Rear Admiral H. E. Horan in "The Navy" (Great Britain) October 1951.

COMBINED operations in the last war played a highly important part in the strategy of the allies which brought about the final overthrow of the Axis powers.

There is nothing new in the use of combined operations. We find references to them in the Bible. The Greeks and Romans used them extensively, and it was a combined operation that started the conquest of England in A. D. 1066.

In the history of Britain perhaps the most interesting period to study from the point of view of amphibious expeditions was the latter half of the eighteenth and the beginning of the nineteenth century. Then, the government realized to the full the value of the command of the seas and used it to attack its enemies where they were the weakest. The continental strategists never seemed capable of seeing the value of this form of warfare or, if and when they did embark on it, of bringing

the operations they undertook to a successful conclusion.

The Gallipoli Operation

In World War I, the major combined operation undertaken was that against the Dardanelles. Here was a full-scale landing in the face of opposition. The technique employed was roughly the same as that used in the Crimea in 1855, despite the fact that the power of the defense had, in the intervening years, greatly increased owing to the efficiency of small-arms fire. At Cape Helles, where a cold-blooded frontal assault took place in broad daylight, a landing was effected only at extremely heavy cost. On the other hand, the landings carried out in the dark at other points on the peninsula were effected with comparatively small loss. This was because the principles of mobility and surprise were used to the full, which, of

course, are always in the hands of the attackers when they hold the command of the seas in the area of operations.

Little Interest in Combined Operations

The period between the wars showed little interest being taken in the study of combined operations beyond a yearly paper exercise in which the three staff colleges took part. As the result of the deliberations during these yearly events, a manual was gradually built up which by 1938 had reached its second edition. However, owing to the lack of money for the armed forces, no definite steps were taken to provide the special craft or equipment which were considered necessary to make an opposed landing a practicable proposition. Despite this fact, a memorandum by the Director of the Royal Naval Staff College, written in 1937, pointed out that, to a maritime power like Great Britain, it was most important that the power conferred by the command of the sea should be taken account of in Imperial strategy. Shortly after this was written, the British China Squadron saw, to its surprise, that the Japanese had studied the matter and actually used special ships and craft in their operations against the Chinese. The ships were of about 10,000 tons and launched specially constructed assault craft over chutes fitted in the stern.

Studying the Problem

In 1938, the Chiefs of Staff set up the Inter-Services Training and Development Center near Portsmouth, and this establishment proceeded to draw up specifications for ships and craft which would be required to carry out an assault in the face of modern beach defenses. Shortage of money still prevented the building of prototypes so at the beginning of the war there were only about a dozen landing craft built.

After Dunkerque, the Prime Minister appointed Admiral of the Fleet Sir Roger Keyes as Director of Combined Opera-

tions. With his experience of the Dardanelles campaign and the growing interest shown by the Service Departments, developments in this form of warfare began to take place. Many of the designs of ships and craft, until now on paper, were proceeded with and thus when he relinquished his appointment, in October 1941, to Lord Louis Mountbatten, a small assault squadron was in being and training was being carried out energetically at the combined training establishments which had been set up in the United Kingdom and the Middle East.

Plans for the Invasion

Shortly after Lord Mountbatten's appointment, the question of the re-entry into the Continent came to the fore. As Chief of Combined Operations, it devolved on him and his organization at Combined Operations Headquarters to start from scratch and plan for the largest opposed landing ever undertaken in the history of the world. From the first, the Chief of Combined Operations decided that the first and most important part of his duty was to ensure that the training of both the naval and army personnel destined for the assault should be of the highest order. The question of the technique for the assault also had to be developed. There was little to go on, so at first the operations undertaken were in the nature of raids. The better known of these were carried out at Vaagso (December 1941), Bruneval (February 1942), and St. Nazaire (March 1942); all of which were successful operations. The outstanding lessons were as follows:

Vaagso: The value of naval support fire and smoke in the assault.

Bruneval: The success of incorporating airborne troops.

St. Nazaire: How success attended an operation when the principles of mobility and surprise were exploited to the full.

These small-scale operations were fol-

lowed by a much more ambitious operation against Dieppe (August 1942). Here, it was clearly proved that to make an assault on the German-occupied coast of France successful, the question of intense artillery fire for the assaulting troops was essential and further that tank obstacles on the beach must be dealt with.

As the study of the invasion of France at Combined Operations Headquarters progressed, it became perfectly clear that not only had the assault, with the subsequent "build-up," to be planned, but the whole south coast of England had to be prepared as a "springboard" from which the operations could be undertaken. The ports, little used owing to the activities of the *Luftwaffe*, had to be brought into operation again. To add to the facilities in the latter, special slipways, known as "hard," had to be designed and constructed so that the special ships and craft designed for beaching could be used to speed the "build-up." In all, more than 170 of these "hards" were laid down and used.

Logistics Problems

In the paper exercises that had taken place before the war, it was always axiomatic that the capture of a fully developed port within the first few days of landing was essential to keep the invading army supplied. This could not be guaranteed. So it was decided to build artificial harbors off the French coast (known as *mulberries*) where ships and craft could discharge across the beaches in any weather. This was accomplished by sinking specially constructed concrete caissons in deep water to form a breakwater. Actually, the harbor thus constructed off the British beach at Arromanches was roughly the size of that enclosed by the breakwaters at Dover.

The enormous amount of gasoline and other liquid fuels necessary for the operations of a modern army was a problem in itself. So after study and experiment

by Combined Operations Headquarters, which proved it was feasible, flexible pipe lines were laid on the bed of the Channel. This was known as Operation *Pluto* and resulted in a million gallons a day being pumped into France.

Ship Design and Construction

In addition to the armored landing craft designed to take the infantry and small vehicles ashore, special designs of ships had to be prepared and the vessels constructed. The most noteworthy of these were the landing ship, tank (LST), and the landing ship, dock (LSD). The former could take a load of 25 large tanks and discharge them directly onto the beach. It is on record that without these ships the landings would never have been successful. The LSD was a brilliant piece of work. It could carry two fully loaded landing craft, tank (LCT), and by trimming down could float them out, when they could proceed ashore under their own power. If not carrying LCTs, they could take a cargo of 20 to 30 smaller landing craft. They also were fitted with workshops where repairs to landing craft could be carried out.

It has been mentioned before that the outstanding lesson of Dieppe was the necessity for intense supporting fire for the assaulting troops. To provide this, two special types of craft were designed by Combined Operations Headquarters. They were the landing craft, rocket (LC(R)), and the landing craft, gun (LC(G)). LCT hulls were used for both designs. The LC(R) was capable of firing 1,100 30-pound high explosive rockets in rippling salvos in 16 seconds. The destructive effect of each rocket was approximately equivalent to that of a 9.2-inch shell.

The LC(G) carried two 4.7-inch guns and its role was to proceed close inshore and engage strong points which might be interfering with the advancing troops or tanks.

Finally, for the assault, it was neces-

sary to have a ship which could accommodate the assault commanders and their staffs, and thus enable them to adjust their plans and transmit orders to the forces on shore. These ships known as landing ship, headquarters (AGC), were converted medium-size liners and had on board, in addition to the staffs, a complete communications organization of all three services.

Summary

Only the more important items that produced success in combined operations have been enumerated. When Lord Mountbatten took over in October 1941, little

in the way of material was available, training and technique were elementary, and the serious consideration of the re-entry into the Continent had only recently begun. Yet, in June 1944, the re-entry into the Continent was successfully accomplished. Had the subject of combined operations been given, before the war, the thought that is its due from a maritime power, perhaps the war would have been shortened considerably. Now, not only have we all the hard-earned experience of the last war behind us, but there is also a special staff of officers of all three services working under the Chief of Amphibious Warfare.

Antiaircraft in the Field Army

Digested by the MILITARY REVIEW from an article by
Major V. M. Higgs in the "Canadian Army Journal" August 1951.

A REQUIREMENT for antiaircraft defense in the field army was appreciated even before World War I. During that war, as has been the case ever since, equipment to cope with developments in aircraft and operational techniques lagged behind. Between the two wars, little was done to improve antiaircraft equipment until the *Luftwaffe* came into being and began to assume alarming proportions. About 1935, steps were taken to improve the situation and some advances were made. The 3.7-inch heavy antiaircraft gun was developed and Sweden began production of the 40-mm light antiaircraft gun, better known as the "Bofors." These two weapons formed the basis of our antiaircraft equipment during World War II.

This article is intended to discuss the use of antiaircraft (AA) in the past war, partly in the light of official reports and partly from the writer's own experience. Some suggestions also will be put forward as to what the future may hold.

Equipment

Mobile equipment, as required by the field army, was of two basic types: heavy antiaircraft (HAA), for defense against high- and medium-level attacks, and light antiaircraft (LAA), for defense against low-level attacks. Each type had its own fire control instruments, which in the case of HAA included predictors, plotting equipment, and, later on as they were developed, radars. Predictors were developed for use with the Bofors (LAA), but, while they were efficient on static positions, training exercises soon proved that they would not stand the rough treatment of bad roads and cross-country travel. They were deleted from the LAA mobile establishments.

Other weapons used were searchlights, balloons, antiaircraft smoke, small guns of 20-mm size, and, in the early stages, such weapons as the Lewis machine gun.

Two types of radar were developed. One was a long-range set capable of giv-

ing approximate target data which were transmitted by telephone to the control room. The second was a fire control set producing accurate information continuously for feeding directly into the predictor.

In addition to the towed version of the Bofors, 40-mm self-propelled equipment was produced. It was well liked by all units, as it was much more mobile and saved considerable road space, which, at times, was at a premium. Personal experience indicates its greatest lack was the absence of a winch gear.

Many minor developments and modifications to equipment were made. Some were the result of reports from users in the field and others were purely to effect economy in production.

Perhaps the greatest single advance in antiaircraft ammunition was the introduction of the variable time fuze. This was invaluable against air targets and its use for air bursts against ground targets soon was exploited.

Separate types were developed for the antiaircraft and ground role. The antiaircraft type was more sensitive and designed to function when it passed within 60 feet of an airplane.

These fuzes eliminate the necessity for fuze setting and thus the normally expected errors arising therefrom.

Only a small percentage of the antiaircraft type failed to function properly, but care had to be taken not to shoot too near any obstacle which would set off the fuze.

The performance of the ground type was affected tremendously by weather conditions. In dry weather, about 85 percent of the fuzes were found to function properly, while in a heavy rain, and largely because of random bursts, only 30 percent correct results were obtained.

Employment

It is the job of the antiaircraft in the field army to ensure that enemy aircraft do not interfere with the plans of the

commander, to assist the air force to keep control of the air, and to assist in the maintenance of fighting forces by protecting base supply ports and lines of communication from air attacks.

A few examples of the protection tasks provided by antiaircraft are beach areas in the assault, base ports, base and advance airfields, line of communications tasks, field gun areas, and infantry assembly areas.

As in other types of artillery, there are normally too many tasks for the number of guns available; the temptation to disperse the antiaircraft in "penny packets" has to be resisted and the tasks must be considered in order of priority. The best results are obtained by strong protection of vital areas of the highest priority and not by defending all vital areas with a sliding scale of antiaircraft according to their importance.

The antiaircraft organization is based on the principle that the antiaircraft tasks are of an area nature and all units can be moved independently of other formations to any area where they are required. For example, to combat the flying-bomb menace in England, they were moved from all over the country and concentrated on this one priority task. At one stage of the battle, a total of 536 HAA guns and 900 LAA guns were deployed. Again, 54 Bofors and 24 3.7-inch guns were deployed for the protection of one bridge over the Volturno River when this was the only bridge in use.

The air defense of any area is an interservice responsibility. The weapons are the fighters of the air force and the antiaircraft guns of the army. The degree of responsibility of each will vary, on the different levels, from army group down to division. Rules and regulations, known as "Operation and Procedure Instructions," must be worked out in conjunction with the air force formation concerned. These instructions dictate the policy for the use of antiaircraft and the

overriding operational control must be exercised by the air force commander.

At corps and divisional levels, anti-aircraft comes under the direct command of the artillery adviser to the formation commander concerned. Whenever possible, these anti-aircraft units should be linked up with any other air defenses in the area and actual fire control exercised from a central control room.

After the D-day landings, the main use of HAA in its primary role was the protection of the beaches, ports, and key centers. A typical example is the defense of the port of Antwerp. Here, 5 HAA regiments (10 United States anti-aircraft gun battalions), along with 40 searchlights, were deployed. The organization was supplemented with a number of LAA batteries and had an early warning system which extended, in the later stages, as far as S'Hertogenbosch, Holland, and Aachen, Germany.

Up to the time of the battle for Falaise, LAA units did a reasonable amount of anti-aircraft firing. Several enemy fighter and reconnaissance planes were shot down over the Normandy battlefields, and during construction of the bridge over the Orne River at Caen, a LAA barrage was set up, designed to prevent enemy night reconnaissance of the site. It succeeded in driving the aircraft up beyond the range of the guns. In organizing this barrage, the greatest difficulty was one of inadequate communications. The radio receiver used was unsatisfactory for picking up broadcasts from the control room.

After the battle of Falaise, few enemy aircraft were seen until the appearance of the jet-propelled fighter late in the fall of 1944. The first attempts at engaging these very fast targets were apt to make LAA gunners despair and imagine that the days of the Bofors were over. However, experience showed this was not the case if conditions favored the gunners. The writer personally saw a jet fighter

shot down by a LAA gun. On being engaged, the aircraft turned to dive on the gun position and in so doing approached at such an angle as to make engagement with Bofors possible. However, the times when these circumstances will occur are few in number and should be regarded as the exception rather than the rule. The great lesson learned by the gun detachment was that, given favorable circumstances, their gun could cope with jets.

In circumstances where air superiority has been established and there is consequently a surplus of anti-aircraft guns, they can provide a useful addition to the fire power of corps and divisional artillery.

A ground role for HAA had been envisaged before the Normandy invasion, but it was then expected that units would be called on to do only simple tasks and would be under the command of a field or medium regiment. This did not turn out to be the case and many units actually were asked to undertake all the tasks of a field or medium regiment. Sometimes they were the only artillery in support of operations. This necessitated, insofar as was possible, an adoption of field artillery procedure. The only major differences were due to differences in equipment.

The use of anti-aircraft guns against ground targets evolved as the air battle went into its dying stages. The 3.7-inch gun proved successful in this role and no trouble developed in the equipment. It was soon discovered that the sighting arrangements were not suitable and field artillery dial sights were fitted. These proved satisfactory, simplifying the laying of the gun and saving a great deal of time in fires controlled by an observation post, since orders could be passed directly to the gun. The only difficulty was in the additional training required by the layers for this role and in providing some suitable lighting arrangement for use in night firing.

The HAA gun proved successful in the ground role. The most important lesson learned was that guns could not be sited to perform a dual role. The layout of communications and command posts is entirely different in the two roles. A HAA unit deployed in the antiaircraft role could take part in fire programs provided ample warning was given. However, such units could not be ready, at any time, to answer calls for fire and to engage aircraft without serious loss of efficiency in both roles and a great strain on personnel.

The possibility of using LAA guns in ground tasks, other than the antitank role, had not been foreseen. Thus, when the opportunity presented itself, equipment had to be improvised. The basic need was for some means by which the guns could engage targets by indirect fire, that is, reasonably accurate means of laying the gun for direction and elevation. Most of the equipment was produced in local workshops and a good measure of success was obtained. This improvisation resulted in a great deal of variation from unit to unit and finally, to ensure standardization, a workshop instruction was issued and stores were manufactured under army group arrangements. The results were fairly satisfactory, but the complete answer to the problem still has not been produced.

LAA guns proved effective against certain types of targets, and often were employed in the ground role. Among tasks carried out successfully by Bofors were harassing fire, destructive fires on observation posts and pillboxes, setting buildings on fire, directional fire for night attacks, and participation in light bombardments.

Because of the limited range and flat trajectory of such weapons, many difficulties were encountered in selecting suitable gun positions. Guns were not normally sited closer than 3,000 yards from the target area.

For most types of targets, the self-

propelled guns were more satisfactory than towed guns. The self-propelled gun was more difficult to conceal and more vulnerable to enemy fire, but could get in and out of position quickly. It was found advisable to evacuate a position immediately after a fire mission, since the gun could be located readily from the tracer of the shell.

Personal experience in conducting fire has allowed the writer to draw the following conclusions regarding antiaircraft in a ground role:

1. In directional fire tasks, some means must be developed to keep the gun on its fixed line.

2. The gun cannot be used as a heavy machine gun. This was tried near Antwerp and in 15 minutes two of four guns were put out of action by enemy fire. Of the 12 men on the two guns, 5 were casualties.

3. Excellent results can be obtained by shooting in the windows of buildings and through the slits of pillboxes, but the engagement must be limited and the position evacuated immediately.

Training

Once a unit has attained a satisfactory standard of training and has joined a field army formation, it can best maintain that standard by frequent operational shooting. If officers ensure that every small weakness is rectified immediately after a shoot, there are scarcely any training difficulties.

When enemy targets are rare, units must be withdrawn periodically for firing practice. Targets also are needed so that they can shoot regularly from the gun positions.

Training expedients and aids can be improvised and value obtained therefrom for HAA units, but for the LAA gunners little can be accomplished without air cooperation.

As in every other type of unit, teamwork is the secret of all success in dealing

with hostile aircraft. Perfection in the functioning of the antiaircraft team can be attained only by regular and continuous training.

The Future

Our potential enemy can and will make use of all types of aircraft in his attempt to interfere with the operations of the field army. These types will probably include strategic bombers capable of flying up to 60,000 feet, tactical bombers, and ground-support aircraft. Either jet or piston engine types, or both, will be used. The main weight of attack by tactical bombers probably will be delivered from altitudes up to 25,000 feet.

To meet the threat from the types of aircraft mentioned above, it probably will require three types of antiaircraft guns—a heavy antiaircraft gun, a medium antiaircraft gun, and a light antiaircraft gun.

The heavy weapon would be designed to combat strategic bomber types, the medium for tactical bombers, and the light weapon for use against both tactical bombers and ground-support aircraft flying within the 0 to 10,000 feet band.

The allies used both heavy and light bombers in direct support of ground forces during the last war. Thus, it is reasonable to suppose that, in a future war, an enemy who would presumably be superior in the air at the start would do the same. Therefore, we can envisage attacks on our divisional areas by both strategic and tactical bombers.

This would indicate a requirement for something much better and much heavier than the Bofors in direct support of our divisions. One answer might be to have both the suggested medium and an improved light antiaircraft weapon organic to corps and divisions.

The Air Arm of the Dominions

Digested by the MILITARY REVIEW from an article by
Squadron Leader D. West in "The Navy" (Great Britain) September 1951.

HISTORY has recorded the wonderful work done by the Dominions' air forces during the last war. British air power always has looked to the Dominions for a large measure of its strength, and some of the finest aircrew members, whether serving in the Royal Air Force or in the individual air forces from overseas, have been men from the Dominions. Therefore, let us look at the situation today and try to find out how the Dominions' air forces are faring, and what proposals there are for building up their strengths to meet the requirements of the defense program.

We may note, first of all, that there is, in most of these air forces, a desire to work in close co-operation with the Royal Air Force, so that training methods are

modeled on the same lines, and, in many cases, British aircraft of the same types are used. It is of the utmost importance that this bias in favor of the methods and productions of the Mother Country should be sustained and stimulated. It means that in a future war, the Commonwealth air forces can work as a team from the moment the war starts. They know each other's methods, they use almost the same equipment and spares, and they are buoyed up by the same spirit.

The Royal Canadian Air Force

It is 27 years since Canada formed her own air force, now the Royal Canadian Air Force (RCAF), and the present aim is to increase its strength to 40 squadrons.

How much progress has been made toward this aim is made known from time to time, although security requirements are tending to restrict information. However, in April 1951, the strength of the force was given as 23,488 officers and men. The 40 squadrons include reserve units, and a women's division is being formed, with pay rates the same as those for men of equivalent ranks.

The chief emphasis in the Royal Canadian Air Force is on fighter interception, so that most of the squadrons are to be equipped with interceptors. Coastal and naval co-operation comes next in order of importance.

Canada has its own aircraft industry, and this has produced a jet transport plane, a high-power gas turbine engine, and a twin-engine jet fighter. The engine is the Avro *Orenda*, and it is certain that it will be used in some of the future fighters of the Royal Canadian Air Force, though it is not yet in production. In addition, it may be married to the American *F-86 Sabre* fighter which is in service with the RCAF. Another fighter is the De Havilland *Vampire*. The new *CF-100*, equipped with *Orenda* engines, eventually will be used.

In addition, there are many British-built bombers, reconnaissance, and search and rescue aircraft, as well as many models of American origin.

On the naval aviation side, British aircraft are predominant, with *Sea Furies* and *Fireflies* the two leading models.

The Royal Canadian Air Force has offered full support to the North Atlantic Treaty Organization, and has agreed to provide 11 fighter squadrons. The force also has played an important part in the Korean airlift. It will be seen that the RCAF is a first-rate air force already; but its potentialities are enormous. It could be expanded rapidly in time of need, and its geographical location enables it, in some ways, to play the part of a bridge

between British and United States methods and productions.

The Royal Australian Air Force

Let us now turn to the Royal Australian Air Force (RAAF). This force, at one time predominantly British, has tended in recent years to become more American than before. However, with the adoption of the *Canberra* jet bomber and, probably, a Hawker fighter, it may once again strengthen its bonds of association with the Royal Air Force.

Nine squadrons of the regular Royal Australian Air Force form a task force (note the use of American titles), while nine auxiliary squadrons are for home defense. The task force includes heavy bombers and photographic reconnaissance aircraft. Two squadrons are, at present, located in Japan and two in Malaysia.

Fighters for the RAAF include *Vampires*, *Mustangs*, *Meteors*, and *Sabres*. Bombers include American aircraft manufactured by Lockheed, as well as *Mosquitos* and *Lincolns*. Eventually, they will include *Canberras*, which are to be built in Australia. The transport side is of the utmost importance because of the great distances involved in any movement. These planes include *Dakotas*, *Vikings*, and Bristol *Freighters*.

As in the Royal Canadian Air Force, a predominantly British flavor is found on the naval aviation side of the Royal Australian Air Force, and both the aircraft and the training methods are closely linked. Among the fighters are *Sea Furies*, *Fireflies*, and *Sea Venoms*.

Chipmunk trainers are produced in Britain and imported into Australia, whereas *Vampires*, *Lincolns*, and *Tudors* are being produced in Australia under license.

The Royal New Zealand Air Force

The Royal New Zealand Air Force (RNZAF), as might be expected, is small but highly efficient, and men from this

Dominion have proved themselves to be exceptionally skilled in all aviation matters.

The authorized strength of the RNZAF is 4,309 officers and men, but, in July 1951, the actual strength was below this figure. There are five regular and four auxiliary squadrons, and the policy is to equip them with British aircraft. For fighters and fighter-bombers, *Vampires* and *Mosquitos* have been chosen, and for training, *Tiger Moths*, *Oxfords*, and *Ansons*. The Dominion's transport aircraft include *Dakotas*, *Dominies*, Bristol *Freighters*, and *Hastings*. The RNZAF has a flying-boat squadron among the regular units, and it is equipped with *Catalina* aircraft. Owing to the neglect of flying boats in Britain, it would appear that replacements of the *Catalinas* will have to come from America.

At Singapore, the RNZAF has a detachment of *Dakotas*, which is used for

supply droppings and for freight hauls to Hong Kong.

The Pakistani Air Force

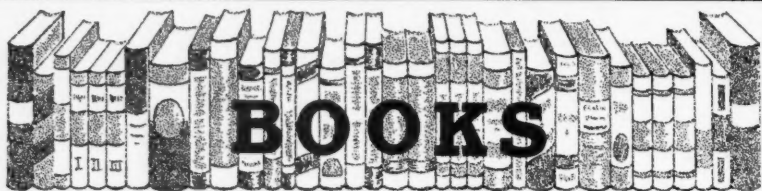
Something must be added about the air force of the Dominion of Pakistan. This came into being in 1947, and has molded itself along the same lines as the Royal Air Force.

There are two fighter squadrons, one bomber squadron, one transport squadron, and one flight of artillery observation aircraft. Except for two types—*Dakotas* and *Harvards*—all the aircraft are British. The fighters are *Attackers*, *Furies*, and *Tempests*; the bombers are *Halifaxes*; the transports are Bristol *Freighters*; the air observation planes are manufactured by Auster; and the trainers are *Tiger Moths* and *Furies*.

It will be seen that the Dominions' air forces are well balanced, capable of expansion, and on a firm basis in regard to training and equipment.

In spite of the fact that air power alone can never be decisive in total war, the air battle must be won if a war is to be won. In spite of all the new developments in the field of atomic energy and the various military applications, the airplane continues to be the best method of projecting the power of the atom to the battlefield, and to the heart of any land-mass nation.

General of the Army Omar N. Bradley



FOR THE MILITARY READER

THE EAST EUROPEAN REVOLUTION.

By Hugh Seton-Watson. 406 Pages. Frederick A. Praeger, New York. \$5.50.

By CAPT SELWYN P. ROGERS, *Armor*

This authoritative book describes and analyzes what the author calls the "sovietization of Western Europe." Dealing extensively with the satellites of the USSR, Hugh Seton-Watson, teacher of Modern History at University College, Oxford, uses his personal knowledge of these countries, shows close attention to current events in Eastern Europe, and states clearly his impressions of Russian bolshevism and European communism.

The first part of his account covers the complex prewar days in Poland, Czechoslovakia, Hungary, Rumania, Bulgaria, Yugoslavia, and Albania, describing in detail the social structure, parties, and politics. Then the author explores in full the impact of war and Nazi conquest on the "area stretching from the Baltic in the north to the Mediterranean in the south, and from the frontiers of Germany, Austria, and Italy in the west to those of the Soviet Union in the east."

In an absorbing chapter entitled "The Seizure of Power," he shows with great scholarship how the Communists obtained power by a combination of political infiltration and Red Army intervention. Another section, just as interesting, presents, as a whole, the story of the resistance movements during World War II.

Discussing political power, international problems, and the East and West, Seton-Watson tells the interesting story

of Tito's now "independent" Yugoslavia, gives his thoughts on the possible infiltration of Western Europe, and describes Germany's place in present times. He writes: "Western statesmen must show the French people that the choice is not between a weak Germany that will be a vacuum in the heart of Europe and a strong Germany that will be a menace to peace, but between a peaceful and industrious Germany integrated into Western Europe and an aggressive totalitarian and militaristic Germany as a spearhead of the Soviet drive to world conquest."

The only fault of the book, if it be considered one, lies in its abundance of detail. Not a book for an afternoon's sitting, it is an essential reference work for the professional soldier who is interested in the study of Soviet imperialism and the spread of communism.

THE POPULATION OF INDIA AND

PAKISTAN. By Kingsley Davis. 263 Pages. Princeton University Press, Princeton, New Jersey. \$7.50.

A sociological and economic evaluation.

THE ART OF SCIENTIFIC INVESTIGATION.

By W. I. B. Beveridge. 171 Pages. W. W. Norton & Co., New York. \$3.00.

ALEUTIANS, GILBERTS AND MAR-

SHALLS (June 1942—April 1944): Vol. VII, History of United States Naval Operations in World War II. By Samuel Eliot Morison. 369 Pages. Atlantic-Little, Brown, Boston, Mass. \$6.00.

THE OTHER SIDE OF THE HILL. By B. H. Liddell Hart. 471 Pages. Revised and enlarged edition. Cassell and Company, Ltd., London. 17 shillings, 6 pence.

By COL GEORGE C. REINHARDT, CE

Presented to the American public in 1948 as *The German Generals Talk*, Liddell Hart's latest book is both "revised and enlarged." Notable on the latter count are the 40 pages covering "The Allied Invasion of Italy," a chapter on "The Creator of Early Victory—Guderian," and the author's new preface which sheds new light on the unconventional convictions of military literature's most vocal rebel. The author's defense of German generals, generically, is warmer than the normal Anglo-Saxon sympathy for the underdog seems to warrant. And so he writes, "On this score I had a pre-war background knowledge wider than that of the prosecutors at Nuremberg. . . ." He unflatteringly compares allied generals' failure to oppose the "inhumanity of the allied bombing policy when they, in making a protest, ran no such risk as the German generals did," with the German military leaders' "blind eye" toward Nazi excesses. He avers that the German General Staff had little influence upon Hitler but tended to be "more of a brake upon his aggressive plans than an impetus to them."

With such a start, it is not remarkable that the book itself is highly controversial, which was doubtless the old master's intention. The familiar "Hartlines," *generals never learn and victory through defense not attack*, are belabored, often from novel angles, with a vehemence that occasionally trips the argument. For example, on page 37 Liddell Hart asserts: "The development of . . . fresh ideas [in the *Wehrmacht*] was . . . helped . . . by the victors [of World War I]—suppression of the General Staff. . . . Left to carry on in its old form . . . it might have remained as routinely inert . . . as other General Staffs." Yet on page 60 the author

opines: "The old General Staff system had been better designed to encourage initiative . . . give its members a wider outlook."

On the subject of armor, much is offered, but as difficult to identify as hash. Kesselring praises tanks in defensive positions; Manteuffel demands each armored division be supplied by air and have its own air elements; Thoma says confusingly "In modern mobile [tank] warfare, tactics are not the main thing. The decisive factor is the organization of one's resources—to maintain the momentum."

Throughout lurks the *idée fixe* of the author—unabashedly avowed for two decades: the analogy of today's tank fighter with the "mail-clad knight," which part, he says, Guderian relived with gusto.

This romantic illusion of individual prowess, which disregards the intricate teamwork inherent in successful tank tactics, is apparently as innocent as it is deep. The author rightly attributes the success of the "Guderian plan," in May 1940, to massed armor, centrally controlled though boldly led. And he applauds the younger German enthusiasts in Spain who strenuously opposed Franco's wish "to parcel out tanks among the infantry—in the usual way of generals who belong to the old school."

Though *The Other Side of the Hill* is principally the stuff which makes history, a few indistinct searchlights are beamed at the future. Manteuffel makes the lone reference to atomic warfare. "The artillery . . . will be of an entirely different conception to . . . artillery in 1939-45. Rockets and atomic energy point the way." No hint, however, as to "how" is offered. Also, the "creation and application of new operational techniques resulting in maximum mobility" is urged. If the study of Liddell Hart's animated recounting of German war leaders' professional views will aid even a little in devising today the techniques for tomorrow's battles, it will be worth the time and effort involved.

THE ARMY LIBRARY

INDEX-DIGEST TO THE UNIFORM CODE OF MILITARY JUSTICE. By Colonel Lee S. Tillotson, *JAGC*; US Army-Ret. 162 Pages. The Military Service Publishing Co., Harrisburg, Pa. \$2.50.

By CAPT SIDNEY J. WALKER, *JAGC*

This handy Index-Digest is arranged under "catch-heads" in alphabetical order with parenthetical references to the Articles of the Code and to the *Manual for Courts-Martial, United States, 1951*. It serves as a handy guide to the military commander in the preparation of charges, and to any members of the armed forces connected with courts-martial procedure. It is more comprehensive and informative than the Index which appears in the *Manual for Courts-Martial, United States, 1951*, and enables the user to find the pertinent section in the Manual more quickly.

The book also contains an appendix which quotes the Act of 5 May 1950, including the Uniform Code of Military Justice in its entirety.

THE UNITED STATES AND FRANCE. By Donald C. McKay. 334 Pages. Harvard University Press, Cambridge, Massachusetts. \$4.00.

By IVAN J. BIRNER, *Ph.D.*

This book provides valuable insight into some of the more perplexing problems of France in 1951. The present French position in world affairs and her point of view are developed historically together with an explanation of the development. Issues that becloud United States-French relations are indicated. A suggested course of action for both countries is presented. These courses of action were written as a postscript, after the start of Korea.

GERMAN-SOVIET RELATIONS BETWEEN THE TWO WORLD WARS, 1919-1939. By Edward Hallett Carr. 141 Pages. The Johns Hopkins Press, Baltimore, Maryland. \$3.00.

TWENTIETH CENTURY UKRAINE. By Clarence A. Manning. 243 Pages. Bookman Associates, New York. \$3.50.

By CAPT RICHARD H. HANSEN, *Arty*

Mr. Manning, a member of the Slavic Department of Columbia University and the author of two previous books on the Ukraine, has done a remarkable job in presenting little-known facts about the Ukrainian people and their long struggle for independence and freedom. This book is the story of a people who have suffered internal and external conflicts, invasions, and the oppression of the Russian Empire and the Soviet Union, and yet who have fought—and are continuing to fight—for independence.

The military reader will find this book interesting and valuable; especially the many examples of Soviet methods in taking over and controlling unwilling groups, organizations, governments, and people. It also presents the methods employed by the Nazis during their invasion and control of the area.

As the author points out, although the Soviet Union has proclaimed the independence of the Ukraine, "culture, language, traditions, and institutions are being remodeled on the pattern of the Kremlin so that the Ukrainians may become worthy associates and followers of their Great Russian brothers. Their past is being rewritten for them, their present is being controlled, and their future is ultimate absorption or annihilation."

NEWSWEEK'S HISTORY OF OUR TIMES. Vol. 2. By the Editors of Newsweek. 611 Pages. Illustrated. Funk & Wagnalls Company, New York. \$6.00.

THE UNITED STATES IN WORLD AFFAIRS, 1950. By Richard P. Stebbins and the Research Staff of the Council on Foreign Relations. 500 Pages. Fifth Volume in the Council's Annual Series. Harper & Bros., New York. \$5.00.

